Greatwall

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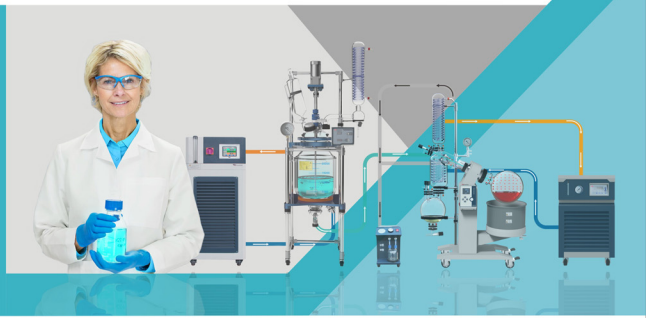

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CATALOG

2018

Company Profile

Founded in 1988, Zhengzhou Greatwall Scientific Industrial and Trade Co., Ltd. has grown to be a technological innovative enterprise integrated with researching, developing, manufacturing andmodern management.

Over decades of R&D and continuous technological innovation, we have provided professional equipment for research and industrial applications like chemical, biological, pharmaceutical industries, new materials, new energy, electronics, metallurgy, petroleum, mechanics and other fields.

"Greatwall" has been concerned and known as one of the most trustworthy brand in above mentioned fields. Our products have been exported to Asia, Europe, America, Australia and covered most universities, scientific research institutes and laboratories in China.

Three main series of products: temperature control system, vacuum system, distillation and reaction system, including Rotary Evaporator, Glass Reactor, Water Circulating Vacuum Pump, Diaphragm Vacuum Pump, Dynamic Temperature System, Recirculating Chiller, Stirring Reaction Bath, High Temperature Heating Circulator, Thermostatic Magnetic Stirring Bath, etc.

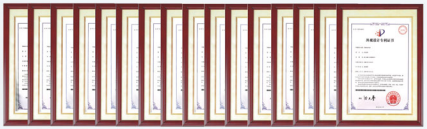
We have professional R&D team which is leading by professors and senior engineers. Ovve to their devotion,more than 70 national patents have been registered and "Greatwall" has been recognized as National High Technology enterprise. We have been cooperating with Universities and Research Institutes to build up associated laboratories, teaching and practice base.

All management is conducted in accordance with ISO 9001 International Quality system since we passed the certification. We strictly complied to 6S managing principles in every process from office to workshop. Our modern production and quality control system makes every procedure controllable and traceable from raw material purchasing to product dispatching, which ensures every single product is reliable.

Patents (Over 72)

Invention Patents & Utility Model Patents

Design Patents



We can provide comprehensive systems consist of 'Dynamic temperature control system+vacuum system+reaction system+distillation system+cooling system' for synthesis reaction and purification.

Lab Scale Rotary Evaporator Solution

DL-400 R-1001VN MP-201 SHB-III

Products	Rotary Evaporator, Chiller, Vacuum Pump
Process	Distillation under vacuum,collecting after condensing
Use	Solvent extracted or separated

Recommended Solution

Chiller	Rotary Evaporator	Vacuum Pump
DL-400	R-1001LN	SHB-III Series or MP-201
	R-1001VN	
	R-1001JN	

Pilot Scale Rotary Evaporator Solution

DL10-3000 R-1020 MP-401 SHB-B95

Products	Rotary Evaporator, Chiller, Vacuum Pump
Process	Distillation under vacuum,collecting after condensing
Use	Solvent extracted or separated

Recommended Solution

Chiller	Rotary Evaporator	Vacuum Pump
DL10-1000/DL30-300	R-1005	SHB-B95 Series
DL10-2000/DL30-700	R-1010	SHB-B95 Series or MP-401
DL10-3000/DL30-1000	R-1020	
DL10-6000/DL30-2500	R-1050	

Lab Scale Glass Reactor Solution

DL-400 GR-1 MP-201 SHB-III

Products	Glass Reactor, Dynamic Temperature Control System, Vacuum Pump
Process	Stirring, Mixing, Reaction
Use	Synthesis reaction, Extraction of new compound

Recommended Solution

Temperature Control System	Glass Reactor	Vacuum Pump
DL-400 ZT-5-200-40H	GR-1	SHB-III Series or MP-201
	GR-2	
	GR-3	
DL-30-300 ZT-5-200-40H	GR-5	

Pilot Scale Glass Reactor Solution

SHB-B95 MP-401 GR-20 ZT-20-200-30H SY-20-250

Products	Glass Reactor, Dynamic Temperature Control System, Vacuum Pump
Process	Stirring, Mixing, Reaction
Use	Synthesis reaction, Extraction of new compound

Recommended Solution

Temperature Control System	Glass Reactor	Vacuum Pump
SY-20-250	GR-20	SHB-B95 Series or MP-401
LT-20-80		
ZT-20-200-XXH		
SY-50-250	GR-50	
LT-50-80		
ZT-50-200-XXH		
SY-100-250	GR-100	
LT-100-80		
ZT-100-200-XXH		

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PARTS 1 Temperature Control

Temperature control

Dynamic Temperature Control System

Applications

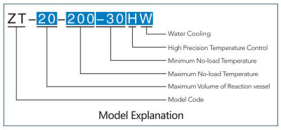
Dynamic temperature control system is a hermetic refrigerated heating circulator which is designed for fast heat-up and cool-down times in external applications. It is widely used to provide cold source and heat source to jacketed reaction vessel, tanks or other demanding applications in fields like pharmaceutical, chemical and biological industries etc.

Features

- Wide working temperature ranges using one bath fluid: -80℃~200℃.
- Refrigeration system, Heating system and Pre-cooling system can work independently or work together continuously.
- Rapid heat-up or cool-down.
- Cool down directly from high temperature.
- The bath fluid runs in a closed loop.It is not likely to volatilize and oxidize under high temperature,or absorb water from ambient air under low temperature, which increased bath fluid life.
- Maintenance-free heat exchanger provides powerful heat exchanging.
- Designed with bath fluid monitoring window, avoid shortage of liquid.
- Multi safety protections: Over temperature cut-off, electrical leakage protection, over-current protection etc.
- It is available with air cooling and water cooling.

Patents

Touchscreen Control



Model Explanation

Advantages

Multi-way of control 12
Two ways of control: Set value and segmented program control.
Program code range: 1~120
Segment code range: 0~99

Process Safety 1
Pre-cooling system and powerful circulating pump ensure safe cooling down, which extends the service life of the machine.

Rapid Heat Transfer 11
Powerful circulating pumps and a large hose cross section ensure maximized flow rates and optimum heat transfer.

De-Gassing Design 2
This design helps exhaust the air in the tubing and jacket easily after application set up, which makes the bath fluid flow fast and smoothly into the jacket.

Space Saving Design 10
Compact design requiring little space.

Completely Closed Circulating Loop 3
The bath fluid runs in a closed loop, which increased its service life.

Safety Protections 9
Over-temperature protection, electricity leakage protection, over-current protection etc.

Touchscreen Color Display 4
5.7" Touchscreen for easy operation and shows the working process.Graphic curve of material temperature and time are always in view.

Pre-cooling Function 8
Specially designed pre-cooling function for rapid cool-down with less power consumption, which is very efficient and energy saving.

Precise Temperature Control 5
PID intelligent temperature control stability ±0.5℃

Reservation Function 7
Set the start time and related parameters in advance, the machine will start running automatically when time is due.

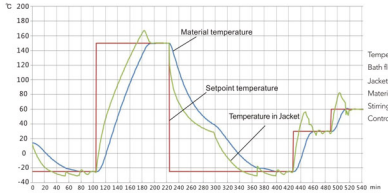
Convenient Data-Communication 6
Designed with Rs485, USB interface and external temperature sensor interface.

Data Communication and Storage: USB, RS485 and PT100 external sensor are fitted as standard.
USB: Copy the data by hard drive for further storage and convenience
RS485: For remote control and data communication
PT100 External sensor: Measure actual temperature of the material in the vessel during reaction process.

Temperature control

Typical Applications

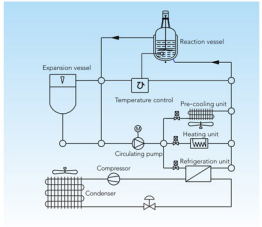
- Temperature control of jacketed or double jacketed reactors used in Chemical, Pharmaceutical and Biological industries.
- Temperature control of material testing.
- Temperature control during distillation process.
- Analog control of temperature changes during a certain process.
- Thermostatic control system.
- Temperature control of semiconductor device.
- Temperature control of thermal testing platform.
- Temperature control of vacuum chambers.



Case Study of ZT-20-300-30H & GR-20 jacketed glass reactor (20L)

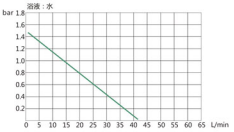
Temperature control system: ZT-20-200-30H
Bath fluid: Therminol D12
Jacketed glass reactor : GR-20 (20L)
Material in the reactor : Therminol D12,16L
Stirring Speed: 100rpm
Control Mode: Control the internal temperature of reactor

Working Theory

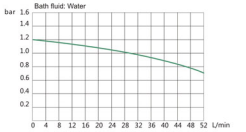


The bath fluid is cooled down by compressor, and heated up by electrical heating, and it is transferred by circulating pump. The temperature of whole system is controlled by electronic control parts.

Performance Curve



Performance Curve of ZT100 - ✱✱✱-✱✱



Performance Curve of ZT-20-✱✱✱-ZT-50-✱✱✱& ZT-100-200-80A

Technical Specifications

Model	Working Temp.Range (℃)	Temperature Stability (℃)	Power Supply (V)	Overall Power (KW)	Cooling Capacity (KW) 20℃	10℃	-10℃	-20℃	-30℃	-35℃	-60℃	-78℃	Refrigerant	Bath Fluid Filling Volume (L)	Heating Power (KW)	Pump Capacity Flow Rate(L/min)	Pressure (bar)	Dimensions (mm)	Net Weight (kg)
ZT-20-200-30H	-30~200	±0.5	220-240V~, 50Hz	4.7	1.7	2.6	1.1	0.7	0.3	–	–	–	R22	10	3	30	1	580W × 825D × 1376H	172
ZT-20-200-40H	-40~200			5.7	1.7	4.3	3.1	2.3	1.2	0.3	–	–	R404A					730W × 840D × 1476H	223
ZT-20-200-80H	-80~200			7.9	1.7	4.3	3.1	2.3	1.2	2	1.4	0.48	R404A /R23	12				889W × 1315D × 1666H	393
ZT-50-200-30H	-30~200		3 ~ , 380V, 50Hz	9.2	3	7.5	4.6	2.5	1.0	–	–	–	R22	13	6			813W × 1092D × 1445H	251
ZT-50-200-40H	-40~200			11.2	3	8.2	6.2	4.5	2.5	1.0	–	–	R404A					859W × 1140D × 1465H	347
ZT-50-200-80H	-80~200			15	3	8.2	6.2	4.5	2.5	5.0	3.0	1.9	R404A /R23	17				889W × 1340D × 1580H	465
ZT-100-200-30H	-30~200			18	3	8.2	6.2	4.5	2.5	–	–	–	R404A	20	12	40	1.2	875W × 1175D × 1720H	385
ZT-100-200-40H	-40~200			24.1	3	18	12	7.3	4.0	1.7	–	–	R404A					1000W × 1350D × 1760H	461
ZT-100-200-80H	-80~200			35.1	3	18	12	7.3	4.0	10	6.0	2.5	R404A /R23	25				1010W × 1740D × 1620H	714
ZT-100-200-80AH	-80~200			21	3	8.2	6.2	4.5	2.5	5.0	3.0	1	R404A /R23	22		30	1	950W × 1355D × 1730H	504

Note: Circulation hose is triple insulated stainless steel,hose connection size 3/4", hose length is 2.6m.

Optional Tubing

Item Name	Working Temperature Range	Connection Size	Length (m)
Fluorine rubber hose	-30~200℃	ϕ20 × ϕ26	2.6
Triple insulated stainless steel hose	-80~200℃	3/4"	2.6
			2

Triple insulated stainless steel hose

Fluorine Rubber hose

Explosion Proof Dynamic Temperature Control System

In order to meet customer's special requirements to avoid any explosion during operation, we developed this Explosion Proof type Dynamic Temperature Control System.

ZT-100-200-80HEx

If you have any special requirements, just contact us please!

LT Series Recirculating Chiller (Ultra Low Temperature)

Applications

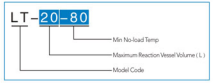
It is mainly used to supply ultra-low temperature cooling liquid to devices which need to carry on reactions under very low temperature.It is compatible with reaction vessels with capacity of 20L, 50L or 100L and it can rapidly cool down the material temperature to -70℃, -80℃, -100℃.

Features

- Intelligent microcomputer control, all digital display, easy operation, LED temperature display.
- Safety: Both high and low pressure protection, Over-load protection, over-current protection, grounding-failure protection etc.
- Compressor is filled with environmental friendly CFC-free refrigerant which meets Euro standard.
- Main parts like compressor, oil separator, electronic valve, expansion valve are all international brands.
- Evaporator is made of full welded plate heat exchanger.
- Powerful circulating pump gives good performance during ultra-low temperature without any leakage or blockage.
- Completely closed circulation system leaves no bath fluid evaporation, which extends the bath fluid life and protect operator from any harm.
- Bath fluid tank and circulation hose are made of corrosion-resistant SUS 304.
- Stable and reliable performance makes it possible for continuous running for over 24 hours.
- Air-cooled type
- Powder coated housing is more anti-corrosive.

LT-100-80

Control Panel



Temperature control

Advantages

1 High Efficiency Heat Exchange
Powerful circulating pump increased heat exchange efficiency.

2 High Stability
Reliable performance makes it possible for long time continuous working.It can be used as a substitute for dry ice.

3 Completely closed bath fluid tank
Completely closed tank reduced bath fluid evaporation,effectively.

4 Easy to Clean
Removable venting grids for quick and easy cleaning

5 Powerful Refrigeration
Rapid cool-down to meet requirements of exothermic reactions

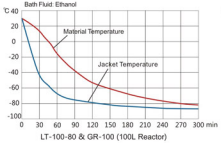
6 Over-flow Protection
The over filling bath fluid will be drained automatically.

7 Space-saving Design
Compact design requiring little space.

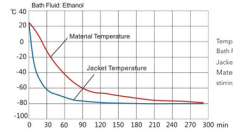
8 Environmental Friendly
CFC-free refrigerant meets the requirements of《Montreal Protocol on Substances that Deplete the Ozone Layer》

Case Study

Temperature Control System: LT-100-80
Bath Fluid: Ethanol
Jacketed Glass Reactor: GR-100
Material in reactor: Ethanol 80L
stirring Speed: 100rpm



LT-100-80 & GR-100 (100L Reactor)

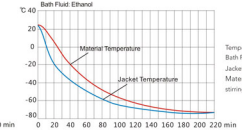


LT-20-80 & GR-20 (20L Reactor)

Temperature Control System: LT-50-80
Bath Fluid: Ethanol
Jacketed Glass Reactor: GR-50
Material in reactor: Ethanol 40L
stirring Speed: 100rpm

LT-50-80 & GR-50 (50L Reactor)

Temperature Control System: LT-20-80
Bath Fluid: Ethanol
Jacketed Glass Reactor: GR-20
Material in reactor: Ethanol 16L
stirring Speed: 100rpm



LT-20-80 & GR-20 (20L Reactor)

Typical Application Sample

Water Circulating Vacuum Pump Jacketed Glass Reactor LT Series Recirculating Chiller

Technical Specifications

Model		LT-20-80	LT-50-80	LT-100-80	LT-100-110
Working Temperature Range		-80～40℃	-80～40℃	-80～40℃	-110～60℃
Temperature Stability		±2℃	±2℃	±2℃	±2℃
Ambient Temperature		5～25℃	5～25℃	5～25℃	5～25℃
Power Supply		3～, 380V, 50Hz	3～, 380V, 50Hz	3～, 380V, 50Hz	3～, 380V, 50Hz
Overall Power (KW)		4.9	9.8	19.3	38
Cooling Capacity (KW)	-40℃	2000	5000	10000	—
	-60℃	1400	3000	6000	—
	-80℃	450	1000	2500	5500
	-90℃	—	—	—	3700
	-100℃	—	—	—	2500
Refrigerant		R404A /R23	R404A /R23	R404A /R23	R404A /R23/R14
Bath Fluid Tank Volume (L)		10	10	24	100
Circulating Pump	Power (W)	280	280	280	2800
	Flow Rate (L/min)	30	30	30	50
	Pressure (bar)	1.0	1.0	1.0	3.0
Dimensions (mm)		645W × 1060D × 1320H	710W × 1200D × 1280H	850W × 1435D × 1598H	1500W × 2950D × 2385H
Net Weight (Kg)		235	350	600	1500

DL Series Recirculating Chiller

Applications

Chiller is usually used to provide constant low temperature condition for inspections,chemical, biological and physical experiments which need to be carried on under low temperature, mainly used for medicine and health care, food process, chemical industry and teaching in colleges and research institutes.

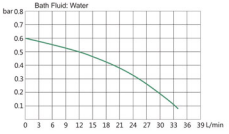
Advantages

- Applications in Chemistry and Biology, like biological fermenter, chemical synthetic vessel etc.
- Equipped with world famous brand compressor, ensure low noise, high reliability, stable performance and long life span.
- Completely closed circulation system prevents bath fluid from evaporation or contamination.
- Built-in filters in circulation hose avoids possible blockage.
- Environmental friendly CFC-free refrigerant meets international standards.
- Compact design with good-looking appearance.
- Designed with liquid level monitor, which make it easier to check the bath fluid left in the tank.
- Pressure of bath fluid can be measured by the pressure gauge which is fixed near the fluid outlet.
- Variable models to meet customer's different requirements.
- Removable side panels for quick and easy cleaning and maintenance.

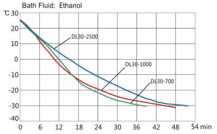
- Eco–friendly refrigerant meets international environmental protection standard; Intelligent control system will prevent compressor from overloading which will extend its service life; closed circulation system reduced evaporation of refrigerant.

Typical Application Sample

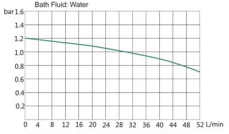
Pump Capacity



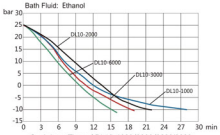
Performance Curve of DL30-300/700/1000



Cool-down Time of DL30–700/1000/2500



Performance Curve of DL10-1000/2000/3000



Cool-down Time of DL10-1000/2000/3000/6000

Temperature control

Technical Specifications

Model	DL10-1000	DL10-2000	DL10-3000	DL10-6000
Working Temperature Range*	-10 ~ 25℃			
Temperature Stability	± 2℃			
Power Supply	220-240V~, 50Hz			3~, 380V, 50Hz
Cooling Capacity (W)	1000@15℃	2000@15℃	3000@15℃	6000@15℃
Refrigerant	R134a			
Bath Fluid Filling Volume (L)	10	17	30	40
Circulation Pump Flow Rate (L/min)	30			
Pressure (bar)	1			
Hose connecting size	1 / 2"			3 / 4"
Dimensions (mm)	435W×690D×720H	465W×690D×820H	495W×760D×860H	650W×1055D×1070H
Net Weight (Kg)	73	86	108	195

★ Working Temperature ≤ Room Temp-5℃

* *

Model		DL30-300	DL30-700	DL30-1000	DL30-2500
Working Temperature Range*		-30 ~ 5℃			
Temperature Stability		± 2℃			
Power Supply		220-240V~, 50Hz			3~, 380V, 50Hz
Cooling Capacity (W)	0℃	1250	1750	2800	6000
	-10℃	800	1100	1800	4000
	-20℃	300	700	1000	2500
	-25℃	150	300	500	1100
Refrigerant		R410A			R404A
Bath Fluid Filling Volume (L)		10	17	30	40
Circulating Pump Flow Rate		20L/min			30L/min
Pressure (bar)		0.4			1
Hose connection size		1 / 2"			3 / 4"
Dimensions (mm)		435W×690D×720H	465W×690D×820H	495W×760D×860H	650W×1055D×1070H
Net Weight (Kg)		70	80	100	195

★ Working Temperature ≤ Room Temp-5℃

DL Series Recirculating Chiller

Applications

This series of chiller is usually used to provide constant low temperature condition for inspections, chemical, biological and physical experiments which need to be carried on under low temperature, mainly used for medicine and health care, food process, chemical industry and teaching in colleges and research institutes.

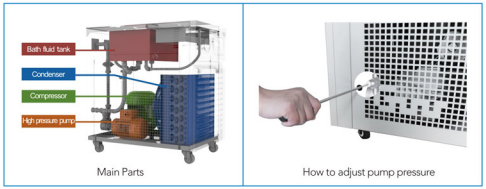
Advantages

- Applications in Chemistry and Biology, like Atomic absorption, ICP-MS, Nuclear Magnetic Resonance, biological fermenter, chemical reaction vessel (synthetic vessel) etc.
- Material Area: Electron Microscopy, X-ray diffraction, X fluorescence, Magnetron sputtering, vacuum coating machine, Laser machine etc.
- Equipped with world famous brand compressor, ensure low noise, high reliability, stable performance and long life span.
- High performance circulating pump or imported high pressure vane pump with stable and reliable quality. Pump pressure is adjustable.
- Completely closed circulation system prevents bath fluid from evaporation or contamination.
- Built-in filters in circulation hose avoids possible blockage.
- Environmental friendly CFC-free refrigerant meets international standards.
- Compact design with good-looking appearance.
- Designed with liquid level monitor, which make it easier to check the bath fluid left in the tank.
- Pressure of bath fluid can be measured by the pressure gauge which is fixed near the fluid outlet.
- Variable models to meet customer's different requirements.
- Removable side panels for quick and easy cleaning and maintenance.

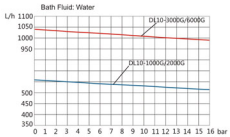
- Eco-friendly refrigerant meets international environmental protection standard; Intelligent control system will prevent compressor from overloading which will extend its service life; closed circulation system reduced evaporation of refrigerant.

Typical Application Sample

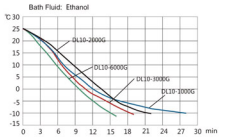
Internal Structure



Pump Capacity



Performance Curve of DL10-1000G/2000G/3000G/6000G



Cool-down Time of DL10-1000G/2000G/3000G/6000G

Technical Specifications

Model	DL10-1000G	DL10-2000G	DL10-3000G	DL10-6000G
Working Temperature Range*	-10～25℃			
Temperature Stability	±2℃			
Power Supply	220-240V~, 50Hz			3~, 380V, 50Hz
Bath Fluid Filling Volume (L)	10	17	30	40
Cooling Capacity (W)	1000@15℃	2000@15℃	3000@15℃	6000@15℃
Refrigerant	R134a			
Circulating Pump Flow Rate	7L/min		16L/min	
Pressure (bar)	1-10			
Hose connection size	1/2"			
Dimensions (mm)	435W×690D×720H	465W×690D×820H	495W×760D×860H	650W×1055D×1070H
Net Weight (Kg)	73	86	108	195

★ Working Temperature ≤ Room Temp-5℃

DL-400 Recirculating Chiller

Applications

This compact chiller is particularly designed for lab scale Rotary Evaporator. It is reasonably structured with small foot-print, which can be placed on bench or on floor.

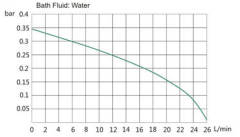
Advantages

- Circulating joint nozzle can be rotated 360°which makes it easy to connect with corollary equipment.
- All parts contacting refrigerant is made of stainless steel 304 and macromolecule anti-corrosive material.
- World famous brand compressor ensures high reliability and long life-span.

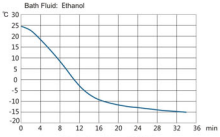
Typical Application Sample

DL-400 R-1001VN MP-201

Pump Capacity



Performance Curve of DL-400



Cool-down Time of DL-400

Technical Specifications

Model	Working Temperature Range*	Power Supply	Overall Power (W)	Cooling Capacity (W)	Refrigerant	Bath Fluid Filling Volume (L)	Material of bath fluid tank	Circulating Pump Flow Rate	Pressure (bar)	Dimensions (mm)	Net Weight (Kg)
DL-400	-15 – 25℃	220-240V~,50Hz	500	400	R134a	3	Stainless Steel 304	17L/min	0.2	245W × 430D × 550H	26

* Working Temperature ≤ Room Temp.-5℃

Cold Trap

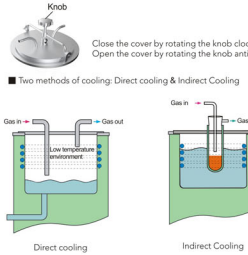
Applications

Cold Trap is used to capture water vapor and harmful gases emission from vacuum drying oven and pressure reduced concentration device, improving efficiency of vacuum system, extending life-span of vacuum pump.

Advantages

- It can be used in drying system for capacitor, battery pole and battery cell.
- It also can be used as pre-freezing bath and low temperature bath.
- Digital display for better control of the bath temperature, which makes it easier to start the vacuum pump at right time.
- Stainless steel 304 liquid bath can be used to do water or ethanol cooling experiments. If equipped with glass condenser, it also can be used to deal with acid or organic solvents.
- Designed with drain valve for easy discharge of collected liquid.

CT-5000H



Technical Specifications

Model	CT-2000H	CT-2000L	CT-5000H	CT-5000L
Cooling Method	Direct cooling & Indirect Cooling			
Ambient Temperature	5 – 25℃			
Power Supply	220-240V~, 50Hz			
Dehumidification Capacity	Max.1kg (water)	Max.1kg (water)	Max.4kg (water)	Max.4kg (water)
No-load Min Temperature	-40℃	-80℃	-40℃	-80℃
Refrigerant	R404A	R404A/R23	R404A	R404A/R23
Temperature Display	Digital Display			
Bath Material	Stainless Steel 304			
Bath Size (mm)	Φ160 × 240		Φ220 × 240	
Dimensions (mm)	360W × 590D × 590H	438W × 528D × 1190H	459W × 583D × 1053H	506W × 669D × 1388H
Net Weight (Kg)	58	100	85	148

DLSB Series Low Temperature Circulating Pump

Applications

It uses compressor for refrigeration and conveys cold bath fluid to other devices by the pump.This Circulating Pump is usually used to cool down tubes or flasks which need to store solvents or carry on reactions under low temperature condition; or cool down packaging machine, printing machine, testing machine, coating machine, freezing process clamp,cooling mould, fine grinding machine, EDM device, chip cleaning device, etching machine, laser machine; or work with rotary evaporator, vacuum freeze drying oven or water jet circulating vacuum pump.

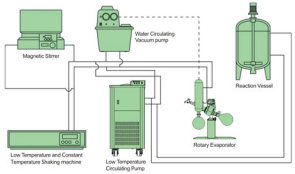
Advantages

- Designed with large open cooling bath, powerful external circulating system, it can be used as freezing bath separately or can be used to provide cooling liquid to other devices by external circulating system.
- Keypad setting and digital display for easy read and control.
- Compressor and key parts are supplied by world famous manufacturer with high performance and reliability.
- Circulating system is made of stainless steel 304 and macromolecule anti-corrosive material which is rust-proof, anti-corrosive and contamination-free.

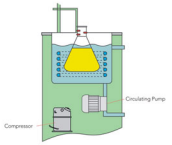
National Patent

DLSB–5/20

＊The lower of temperature, the less of cooling capacity. Please choose the most suitable cooling equipment according to your actual temperature requirement or cooling capacity to achieve the best cooling effect.

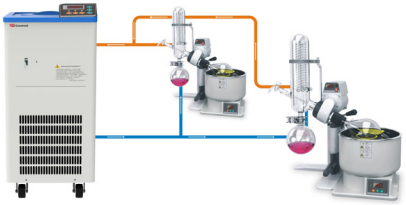


Low Temperature Circulating Pump Application Sample



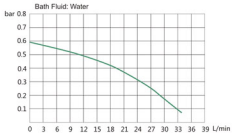
Used as Freezing Bath

Typical Application Sample

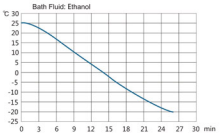


How to Connect DLSB-5/20 with Two Rotary Evaporators (R-1001)

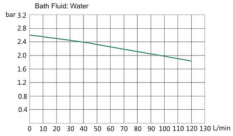
Performance Curve



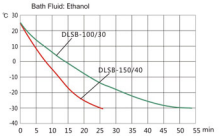
Performance Curve of DLSB-5/20



Cool-down Time of DLSB-5/20



Performance Curve of DLSB-100/30，DLSB-150/40



Cool-down Time of DLSB-100/30，DLSB-150/40

Temperature control

Technical Specifications

Model		DLSB-5/10	DLSB-5/20	DLSB-100/30	DLSB-150/40
Working Temperature Range*		-10~25℃	-20~25℃	-30~10℃	-40~10℃
Ambient Temperature		5~25℃			
Temperature Stability		±2℃			
Power Supply		220~240V~, 50Hz		3~, 380V, 50Hz	
Overall power (W)		600	635	5586	9410
Cooling Capacity (W)	10℃	1250	1150	17600	-
	0℃	970	880	12000	-
	-10℃	650	600	7500	9000
	-20℃	-	320	6500	6000
	-30℃	-	-	2900	3500
	-40℃	-	-	-	2500
Refrigerant		R22		R404A	
Bath Fluid Filling Volume (L)		5		100	150
Circulating Pump Flow Rate (L/min)		20		67	67
Pressure (bar)		0.4		2.2	
Bath Size (mm)		Φ220×180		600×450×370	805×390×735
Bath Opening Diameter (mm)		Φ210		Φ400	
Housing Material		Spray coated steel			
Dimensions (mm)		340W×450D×690H	340W×450D×690H	840W×1270D×1375H	1630W×903D×1148H
Net Weight (Kg)		41	41	300	400

* Working Temperature ≤ Room Temp-5℃

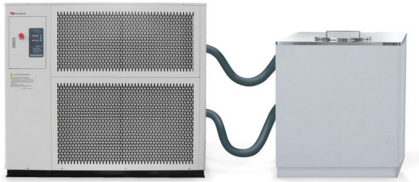
DLSB Series Low Temperature Circulating Pump (For Pilot Plant)

Applications

This circulating pump is designed for pilot plant low temperature test or inspection in chemical and biological industries, which can be applied to medical and healthcare, food processing, metallurgy, chemical industry and laboratories of collages and research institutes, providing low temperature condition for large equipment such as distillation of high purity metals and rare materials, magnetron sputtering, vacuum coating etc.

Advantages

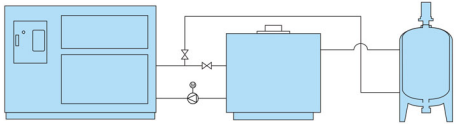
- Using deionized water as bath fluid can prevent from pollution and scaling, which ensures high efficiency and longer service life.
- Air-cooling design saves tons of water.
- Bath fluid tank is separated from main cooling machine.This design is for better insulation and easy filling.The circulating pump will transfer the low temperature bath fluid to other devices from the fluid tank.
- Equipped with international advanced refrigeration units.
- Over-pressure protection, thermal protection and overcurrent protection etc.
- Circulating system is made of stainless steel 304 and macromolecule anti-corrosive material which is rust-proof, anti-corrosive and contamination-free.
- Set value can be locked according to actual needs.
- Best to work with 300L~100L reaction tank.



Main Cooling Machine　　Insulated Bath Fluid Tank

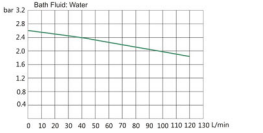
- Insulated bath fluid tank is separated from main cooling machine.

Connection Sample

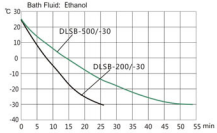


Main Cooling Machine　　Insulated Bath Fluid Tank　　Reaction Tank

Performance Curve



Performance Curve of DLSB-200/30 , DLSB-500/30



Cool-down Time of DLSB-200/30 , DLSB-500/30

Technical Specifications

Model		DLSB-200/30	DLSB-500/30
Working Temperature Range*		-30 ~ 10℃	
Ambient Temperature		5 ~ 25℃	
Temperature Stability		± 2℃	
Power Supply		3 ~ , 380V, 50Hz	
Overall Power (W)		8810	13140
Cooling Capacity (W)	10℃	28000	37000
	0℃	20000	26000
	-10℃	13000	17000
	-20℃	7600	10000
	-30℃	3500	5000
Refrigerant		R404A	R404A
Bath Fluid Filling Volume (L)		200	500
Circulating Pump Flow Rate (L/min)		67	67
Pressure (bar)		2.2	2.2
Bath Size (mm)		805 × 390 × 735	800 × 800 × 800
Bath Opening Diameter (mm)		Φ400	Φ400
Housing Material		Spray coated steel	
Dimensions of Cooling Machine (mm)		1440W × 945D × 1430H	1680W × 945D × 1340H
Dimensions of bath fluid tank (mm)		1100W × 820D × 950H	1195W × 985D × 1250H
Net Weight (Kg)		450	500

* Working Temperature ≤ Room Temp-5℃

DLB Series Low Temperature Circulating System for Scale-up Test

Applications

This system provides low temperature condition for scale-up tests and experiments in applications such as chemical industry, food processing, pharmaceutical plants, refrigeration industry and metallurgy etc.

Advantages

- Using deionized water as bath fluid can prevent from pollution and scaling, which ensures high efficiency and longer service life.
- Circulating system is made of stainless steel 304 and anti-corrosive material which is rust-proof, anti-corrosive and contamination-free.
- Multi-protections: time-delay protection,overpressure protection, thermal protection, overcurrent protection and phase loss protection etc.
- Both air-cooling and water-cooling are available.
- Equipped with international advanced refrigeration units.
- PLC Control.
- Set point data can be locked according to actual needs.
- It can work continuously.
- We can design the whole solutions according to user's requirements.

PLC Control Panel

DLB-55-31

DLB-40-76

Main Machine of DLB-80-16 | Bath Fluid Tank | Reation Kettle Tank

Water Cooler (10 ~ 25℃)

Applications

This cooler can provide cooling water under certain pressure and flow rate, meeting the cooling demands of devices like electron microscope, X-ray machine, laser machine, mass spectrometer, X-ray diffractometer, molecular pump, nuclear magnetic resonance, accelerator, vacuum coating machine, electron beam welding machine, ion spray painting machine, fatigue of material testing machine, high and low temperature test box etc.
It is particularly can be used to provide cooling water to several rotary evaporators or glass reactors at the same time.

Advantages

- PID temperature control with high precision.
- Digital display of water temperature for easy read and control.
- Water temperature and flow rate can be adjusted according to actual need.
- Low flow rate alarm function avoids lack of water during circulation.
- High performance compressor is supplied by world famous manufacturer with stability and reliability.

DLSB-1000

DLSB-10000

Technical Specifications

Model	Cooling Capacity (W)	Working Temperature Range (℃) *	Temperature Stability (℃)	Power Supply	Bath Liquid Capacity (L)	Pressure (bar)	Flow Rate (L/min)	Dimensions of Cooling Machine (mm)
DLSB-1000	1000	10 ~ 25	±1	220-240V~, 50Hz	12	1.7 ~ 3.6	8 ~ 58	485W × 610D × 890H
DLSB-1800	1800			220-240V~, 50Hz	12	1.7 ~ 3.6	8 ~ 58	550W × 640D × 890H
DLSB-2500	2500			220-240V~, 50Hz	12	1.7 ~ 3.6	8 ~ 58	580W × 670D × 1000H
DLSB-3500	3500			220-240V~, 50Hz	19	1.7 ~ 3.6	8 ~ 58	635W × 750D × 1020H
DLSB-4500	4500			220-240V~, 50Hz	19	1.7 ~ 3.6	8 ~ 58	590W × 730D × 940H
DLSB-6500	6500			3 ~ , 380V, 50Hz	35	1.7 ~ 3.6	8 ~ 58	690W × 1160D × 1205H
DLSB-10000	10000			3 ~ , 380V, 50Hz	150	1.7 ~ 3.6	8 ~ 58	825W × 1290D × 1300H
DLSB-13000	13000			3 ~ , 380V, 50Hz	200	1.7 ~ 3.6	8 ~ 58	840W × 1270D × 1375H
DLSB-20000	20000			3 ~ , 380V, 50Hz	300	1.3 ~ 2.8	16 ~ 116	970W × 1340D × 1680H
DLSB-30000	30000		±2	3 ~ , 380V, 50Hz	150	1.3 ~ 2.8	16 ~ 116	780W × 1673D × 1185H
DLSB-45000	45000			3 ~ , 380V, 50Hz	200	2.1 ~ 3.0	83 ~ 183	960W × 1720D × 1140H
DLSB-60000	60000			3 ~ , 380V, 50Hz	200	1.6 ~ 2.6	133 ~ 366	1080W × 2100D × 1050H

*Working Temperature ≤ Room Temp-5℃

DHJF Series Low Temperature (Constant Temperature) Stirring Reaction Bath

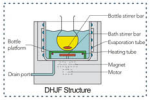
Applications

It can be used as a substitute for dry ice or liquid nitrogen to carry on experiments which need to be done under low temperature condition, especially can be used for cooling and heating flasks, beakers and tubes in hospitals, research institutes, college laboratories and chemical laboratories.

Advantages

- Intelligent PID control with high precision.
- Digital temperature display for easy read and control.
- Totally enclosed magnetic stirrer with stable performance and long life time.
- An optional secondary stirring makes the materials temperature in the vessel more uniform.
- The opening diameter can be adjusted according to flasks size, which can reduce loss of cooling liquid during stirring reaction.
- Designed with supporting pole and clamp for fixing burette or external temperature sensor.
- High performance compressor is supplied by world famous manufacturer with stability and reliability.
- Designed with drain port at the bottom for easy drain or replacing of bath liquid.

National Patent



DHJF Structure

DHJF-4002

DHJF-2005

DHJF-8002 (Horizontal)

DHJF-8002 (Vertical)

Digital Control

LCD Control Panel

DHJF-4002

DHJF-8005

LCD Control Panel

- LCD Screen
- Five program groups for five different temperature
- Remote control available
- Over-temperature alarm

National Patent

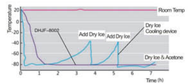
DHJF-8002 Vertical

DHJF-8005

Flexible Cover

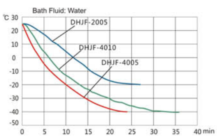
Flexible cover can be adjusted according to bottle size, reducing cold loss

Flexible cover is available on model DHJF-8002, DHJF-8005, DHJF-4002, DHJF-4005, DHJF-2005

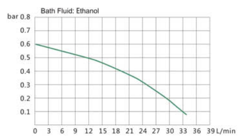


Cooling Performance of DHJF-8002

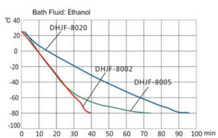
Performance Curve



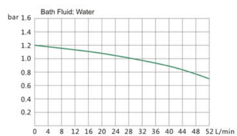
Cool-down Time of DHJF-2005/4005/4010



Performance Curve of DHJF-2005/3010/3020/3030/4005/4010/4020/8020



Cool-down Time of DHJF-8002/8005/8020



Performance Curve of DHJF-3050/4050/8050

Greatwall

Temperature control

Technical Specifications

Model		DHJF-2005	DHJF-3010	DHJF-3020	DHJF-3030	DHJF-3050
Working Temperature Range		-20～99℃	-30~99℃	-30~99℃	-30~99℃	-30～99℃
Ambient Temperature		5～25℃	5~25℃	5~25℃	5~25℃	5~25℃
Temperature Stability		±0.2℃	±0.5℃	±0.5℃	±0.5℃	±0.5℃
Power Supply		220-240V~，50Hz				3～, 380V, 50Hz
Overall Power (W)		2135	2400	2980	4670	7635
Cooling Capacity (W)	10℃	1150	1700	2550	3250	7500
	-10℃	600	800	1100	1800	4000
	-30℃	—	150	300	500	1040
Refrigerant		R22				
Bath Liquid Capacity (L)		5	10	20	30	50
Bath Size (mm)		Φ250×130	Φ250×250	Φ300×300	Φ400×235	Φ500×320
Bath Opening Diameter (mm)		Φ210	Φ210	Φ280	Φ320	Φ400
Max Bottle Size (mm)		2000	3000	5000	10000	20000
Heating Power (W)		1500	1500	1500	2450	4500
Flow Rate (L/min)		20	20	20	20	30
Pressure (bar)		0.4	0.4	0.4	0.4	1.0
Housing Material		Spray coated steel				
Dimensions (mm)		400W×535D×790H	395W×505D×825H	530W×580D×970H	580W×670D×1005H	740W×1300D×1060H
Net Weight (Kg)		42	50	90	100	150

Model		DHJF-4002	DHJF-4005	DHJF-4010	DHJF-4020	DHJF-4030	DHJF-4050
Working Temperature Range		-40～99℃	-40～99℃	-40～99℃	-40～99℃	-40～99℃	-40～99℃
Ambient Temperature		5～25℃	5～25℃	5～25℃	5～25℃	5～25℃	5～25℃
Temperature Stability		±0.2℃	±0.2℃	±0.2℃	±0.5℃	±0.5℃	±0.5℃
Power Supply		220-240V~，50Hz				3～, 380V, 50Hz	
Overall Power(W)		820	2450	2420	2870	6088	11356
Cooling Capacity (W)	10℃	290	1000	1800	2100	4750	10500
	-20℃	80	450	520	900	2300	4750
	-40℃	10	40	50	150	480	1500
Refrigerant		R404A					
Bath Liquid Capacity (L)		2	5	10	20	30	50
Bath Size (mm)		Φ160×105	Φ250×130	Φ250×250	Φ300×300	Φ400×235	Φ500×320
Bath Opening Diameter (mm)		Φ140	Φ210	Φ210	Φ280	Φ320	Φ400
Max Bottle Size (mm)		500	2000	3000	5000	10000	20000
Heating Power (W)		300	1500	1500	1500	3600	6000
Flow Rate (L/min)		—	20	20	20	20	30
Pressure (bar)		—	0.4	0.4	0.4	0.4	1.0
Housing Material		Spray coated steel					
Dimensions (mm)		430W×470D×435H	400W×535D×790H	485W×590D×935H	535W×595D×1010H	590W×670D×1005H	810W×1390D×1335H
Net Weight (Kg)		35	56	84	95	120	150

Greatwall

Model		DHJF-8002	DHJF-8005	DHJF-8020	DHJF-8050
Working Temperature Range		-80 ~ 10℃	-80 ~ 99℃	-80 ~ 99℃	-80 ~ 99℃
Ambient Temperature		5 ~ 25℃	5 ~ 25℃	5 ~ 25℃	5 ~ 25℃
Temperature Stability		± 2℃	± 0.2℃	± 0.5℃	± 0.5℃
Power Supply		220-240V~, 50Hz			3 ~ , 380V, 50Hz
Overall Power (W)		1024	3160	4500	9400
Cooling Capacity (W)	-40℃	200	350	1100	2000
	-60℃	120	260	600	1400
	-80℃	60	80	150	450
Refrigerant		R404A,R23			
Bath Liquid Capacity (L)		2	5	20	50
Bath Size (mm)		Φ160 × 105	Φ250 × 160	Φ350 × 270	Φ550 × 250
Bath Opening Diameter (mm)		Φ140	Φ210	Φ280	Φ400
Max Bottle Size (mm)		500	2000	5000	20000
Heating Power (W)		——	1500	2000	4500
Flow Rate (L/min)		——	——	20	30
Pressure (bar)		——	——	0.4	1.0
Housing Material		Spray coated steel			
Dimensions (mm)		410W × 610D × 495H (Horizontal) 380W × 450D × 860H (Vertical)	485W × 550D × 1005H	760W × 940D × 965H	810W × 1010D × 1120H
Net Weight (Kg)		68	100	200	300

DHJF Series Ultra Low Temperature Stirring Reaction Bath (-100℃、-120℃)

Applications

Traditionally, when cooling temperature is below-100℃, it is achieved by combining three compressors together to form a three-leveled refrigerating group, which is complex, costly and accompanied by risk of leakage.
While, our R&D department designed a new powerful single-stage compression condensing refrigeration heat exchanger. DHJF Series Ultra Low Temperature Stirring Reaction Bath was developed on the base of this technology.This internal heat exchanger is composed of outer evaporating tubes and several inner condensing tubes. Compared with the three-leveled refrigerating group, the single compressor refrigeration unit is simpler, safer, more stable and more cost-saving.

Advantages

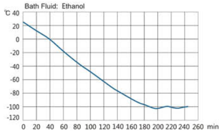
- We own the core technology. (National Patented Product)
- Our leading ultra-low temperature technology can reach −100℃−−120℃.
- Compressor and key parts are supplied by world famous manufacturers from USA, Germany or France with high performance and reliability.
- Keypad setting and digital display for easy read and control.
- Circulating system is made of stainless steel 304 and micromoles anti−corrosive material which is rust−proof, anti−corrosive and contamination−free.
- External circulation is not available when temperature is below −100℃.

DHJF-1230

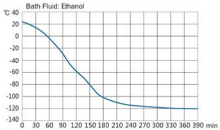
DHJF-1005

Temperature control

Performance Curve



Cool-down Time of DHJF-1005



Cool-down Time of DHJF-1205

Technical Specifications

Model		DHJF-1005	DHJF-1205	DHJF-1010	DHJF-1210	DHJF-1020	DHJF-1220
Working Temperature Range		-100～-60℃	-120～-60℃	-100～-60℃	-120～-60℃	-100～-60℃	-120～-60℃
Ambient Temperature		5～25℃					
Temperature Stability		±2℃					
Power Supply		220-240V~, 50Hz		3~, 380V, 50Hz			
Overall Power (W)		820	820	2050	2050	4000	
Cooling Capacity (W)	-60℃	110	110	160	160	600	600
	-80℃	50	50	70	70	480	480
	-100℃	20	30	40	40	180	180
	-120℃	-	20	-	20	-	40
Refrigerant		Solvent mixture					
Bath Liquid Capacity (L)		5	5	10	10	20	20
Bath Size (mm)		Φ220×180	Φ220×180	Φ250×250	Φ250×250	Φ300×300	Φ300×300
Bath Opening Diameter (mm)		Φ210	Φ210	Φ210	Φ210	Φ280	Φ280
Max Bottle Size (ml)		2000	2000	3000	3000	5000	5000
Housing Material		Spray coated steel					
Dimensions (mm)		630W×795D×965H		670W×780D×1085H		810W×1200D×1310H	
Net Weight (Kg)		125	125	150	154	154	190

* *

Model		DHJF-1030	DHJF-1230	DHJF-1050	DHJF-1250	DHJF-10100	DHJF-12100
Working Temperature Range		-100～-60℃	-120～-60℃	-100～-60℃	-120～-60℃	-100～-60℃	-120～-60℃
Ambient Temperature		5～25℃					
Temperature Stability		±2℃					
Power Supply		3~, 380V, 50Hz					
Overall Power (W)		4000		4876		7000	
Cooling Capacity (W)	-60℃	620	620	700	700	1200	1200
	-80℃	480	480	580	580	700	700
	-100℃	200	200	420	420	500	500
	-120℃	-	80	-	125	-	300
Refrigerant		Solvent mixture					
Bath Liquid Capacity (L)		30	30	50	50	100	100
Bath Size (mm)		Φ400×235	Φ400×235	Φ450×320	Φ450×320	Φ500×500	Φ500×500
Bath Opening Diameter (mm)		Φ320	Φ320	Φ400	Φ400	Φ400	Φ400
Max Bottle Size (ml)		10000	10000	20000	20000	20000	20000
Housing Material		Spray coated steel					
Dimensions (mm)		1160W×800D×1310H		1340W×820D×1310H		2120W×1140D×1210H	
Net Weight (Kg)		180	190	265	265	420	420

HX Series Constant Temperature Circulating Bath

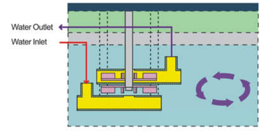
Applications

HX series can be used as a thermostatic reaction bath and also can be used for external circulation to transfer cooling or heating bath fluid to equipment like Electrophoresis apparatus, electro probe etc.It also can be applied in petroleum, chemical industry, metallurgy, medicine and biochemistry for R&D research, as well as college laboratory, factory laboratory and inspection department.

Advantages

- Intelligent PID control with high precision.
- Digital temperature display for easy read.
- Compressor is supplied by world famous manufacturers from USA or France with high performance and reliability.
- Double impeller circulating pump has self-priming function, which increases flow rate and lift distance.It is a high performance circulating bath with domestic leading technology.
- Bath liquid forms uniform flow during circulation ensures stable heat exchange.
- Bath fluid tank is made of stainless steel 304.

HX-2015



Double impeller and self-priming for more uniform temperature

Technical Specifications

Model	Working Temperature Range	Temperature Stability	Power Supply	Cooling Capacity (W)	Refrigerant	Bath Fluid Filling Volume (L)	Bath Opening Diameter (mm)	Circulating Pump Flow Rate (L/min)	Heating Power (W)	Dimensions (mm)	Net Weight (Kg)
HX-1005	-5~99℃	±0.05℃	220-240V~, 50Hz	190～375	R134a	5	170W×360D×145H	10	1200	250W×465D×650H	32
HX-2015	-20~99℃	±0.2℃		370～1200	R404A	15	245W×365D×168H	10	1750	340W×480D×780H	48
HX-3010	-30~99℃	±0.2℃		300～1200	R404A	10	170W×360D×145H	10	1750	250W×445D×690H	55

Heating Bath Circulator

Applications

It can continuously transfer heating fluid to reactors or other devices, general type and air-cooled type available.

Advantages

- Bath fluid tank is made of anti-corrosive stainless steel.
- Intelligent PID control with high precision.
- Keypad setting and digital display for easy read and control.
- Air-cooled model can cool down rapidly with forced air cooling.

Heating Bath circulator (SY Series)

Technical Specifications

Model	SY-10	SY-20	SY-50	SY-100
Working Temperature Range	RT+5 – 200℃			
Temperature Stability	± 2℃			
Power Supply	220-240V~, 50Hz		3~, 380V, 50Hz	
Bath Liquid Capacity (L)	10	20	50	100
Bath Opening Diameter (mm)	Φ300 × 170	Φ350 × 220	Φ500 × 270	Φ550 × 550
Heating Power (W)	1450	2450	6000	7350
Pump Power (W)	280			
Circulating Pump Flow Rate (L/min)	30			
Pressure (bar)	1 – 1.2			
Dimensions (mm)	505W × 420D × 685H	505W × 420D × 735H	635W × 550D × 810H	735W × 655D × 1070H
Net Weight (Kg)	27	28	40	67

Heating Bath Circulator

Applications

This is a water-cooled type heating circulator.The bath fluid is heated up by electricity and transferred to reactors by circulating pump, which can be applied to pharmaceutical plants, chemical industry and petrochemical industry.

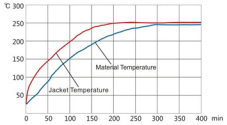
Advantages

- Designed with exhaust valve, which makes it easy and smooth when filling in bath fluid.
- Using oil as bath fluid will extend the service life of circulator.
- Over-temperature alarm, overload protection, overcurrent protection
- Intelligent PID control with high precision
- Bath fluid tank is made of anti-corrosive stainless steel.
- Heating bath fluid circulates in a closed system, which extends its service time.
- Tap water cooling design can cool down the high temperature bath fluid rapidly.

SY-20-250

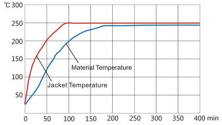
Heat - up Time

Heating Circulator: SY-20-250
Bath Fluid: Polydimethyl Siloxane (PMX-200-50cst)
Jacketed Glass Reactor: GR-20 (20L)
Material in Reactor Polydimethyl Siloxane (PMX-200-50cst,16L)
Stirring Speed: 100rpm



SY-20-250 & GR-20 (20L Glass Reactor)

Heating Circulator: SY-100-250
Bath Fluid: Polydimethyl Siloxane (PMX-200-50cst)
Jacketed Glass Reactor: GR-100 (20L)
Material in Reactor Polydimethyl Siloxane (PMX-200-50cst,80L)
Stirring Speed: 100rpm



SY-100-250 & GR-100 (100L Glass Reactor)

Technical Specifications

Model		SY-20-250	SY-50-250	SY-100-250	SY-200-200
Maximum temperature		250℃	250℃	250℃	200℃
Working Temperature Range		RT+5 ~ 250℃			RT+5 ~ 200℃
Temperature Stability		± 0.5℃			
Ambient Temperature		5 ~ 40℃	5 ~ 40℃	5 ~ 40℃	5 ~ 40℃
Ambient Humidity		≤ 60%	≤ 60%	≤ 60%	≤ 60%
Power Supply		220~240V~, 50Hz	3 ~ , 380V, 50Hz	3 ~ , 380V, 50Hz	3 ~ , 380V, 50Hz
Pump Capacity	Power (W)	370	370	750	2200
	Max Flow Rate (L/min)	42	42	75	166
	Max Pressure (bar)	2.8	2.8	1.5	2.0
Connection Size		3/4"	3/4"	3/4"	1"
Bath Fluid Filling Volume (L)		9	13	17	22
Heating Power (W)		3	6	12	24
Dimensions (mm)		430W × 690D × 1075H	430W × 690D × 1225H	640W × 940D × 1585H	635W × 920D × 1580H
Net Weight (Kg)		60	120	260	240

Tubing: Insulated stainless steel, hose connection size 3/4", hose length is 2.6m.

PARTS 2 Rotary Evaporator

Rotary Evaporator

R-series Rotary Evaporator (Lab-scale)

Applications

It is suitable for experiment of evaporation, distillation or separation of chemicals.It usually works with water circulating vacuum pump and recirculating chiller as a whole system to meet the production and experimental requirements.

Advantages

- Patented technology of double sealing of Teflon (PTFE) and FV rubber can ensure the negative pressure level.
- The tilt angle of the evaporating flask is adjustable.
- Evaporating flask can be lifted manually by the handle.
- Specialized motor and reasonable structure design ensures the evaporating flask running smoothly and steadily.
- PID controller ensures precise temperature control.
- Digital display of rotation speed and bath temperature.
- Individual main machine and water bath design for easy future upgrades.

R-1001LN

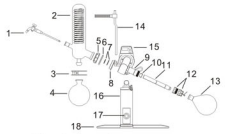
R-1001VN

Vacuum Sealing Kit (Patented)

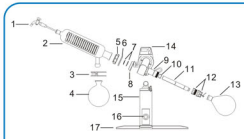
Technical Specifications

Model		R-1001
Rotation Speed		20～180rpm
Evaporating Speed		20ml/min
Pressure rise rate of vacuum system		≤0.33kPa/min
Temperature Range		Room temp ～99℃
Temperature Stability		±1℃
Temperature Control		Keypad input, Digital display
Speed Control		Knob setting, Digital display
Safety Functions		Over-current protection, ground fault protection, over-temperature protection
Lifting		Weight balancing Gliding elevating+ manual lifting
Rotary Motor Power		25W
Heating Power		1050W
Condenser Type		Optional (Vertical or Diagonal)
Evaporating Flask		500/1000ml (Optional)
Receiving Flask		1000ml
Vacuum Sealing		Double sealing rings made of Teflon+ Viton materials
Water Bath Size · Capacity		254×130mm · 6.5L
Evaporating Speed (mL/h)	Water	15
	Ethanol	20
Lifting Distance		100+150mm
Ambient temperature		5～35℃
Overall Dimensions (mm)		About 560W×320D×660H (Depend on the condenser type)
Net Weight		9.5kg
Power Supply		110V~, 60Hz or 220-240V~ , 50/60Hz

Configuration



1.Glass feeding valve
2.Glass condenser
3.Receiving flask clamp
4.Receiving flask
5.Condenser locknut
6.Spring ring
7.Vacuum sealing ring
8. Bearing end cap
9.Stainless steel rotation axis
10.Tapered sleeve
11.Glass rotation axis
12.Evaporating flask quick-release nut
13.Evaporating flask
14. Condenser support +Rubber bracket
15.Motor shield
16.Lifting column
17.Lifting handle
18.Base



1.Glass feeding valve
2.Glass condenser
3.Receiving flask clamp
4.Receiving flask
5.Condenser locknut
6.Spring ring
7.Vacuum sealing ring
8. Bearing end cap
9.Stainless steel rotation axis
10. Tapered sleeve
11.Glass rotation axis
12.Evaporating flask quick-release nut
13.Evaporating flask
14.Motor shield
15.Lifting column
16.Lifting handle
17.Base

Model

R-1001-□□

Condensing unit : LN VN JN

LN : Lean type

VN : Vertical type

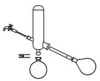
JN : Jacketed type

Glass Components

Three types of condenser available.

LN type

Lean condenser with higher cooling efficiency.



VN type

Vertical condenser with smaller foot print.

JN type

Jacketed condenser with lower temperature by dry ice cooling.

Accessories

Evaporating flask 500ml

Evaporating flask 1000ml

Receiving flask 1000ml

Receiving flask 2000ml

Sealing ring

Receiving flask clamp

Associated Equipment

Vacuum Pump

- No working medium needed
- Small size,light weight
- Chemical resistant

MP-201 Diaphragm Vacuum Pump

- Using water as circulating medium
- Double-tap with vacuum gauge
- Classic and economic.

SHB-Ⅲ Water Circulating Vacuum Pump

Recirculating Chiller

- Particularly designed for small rotary evaporator
- High quality compressor
- Temperature range: -15 ~ 25℃
- Cooling capacity: 400W (0℃)

DL-400 Recirculating Chiller

- Designed with universal casters for easy move
- High quality compressor
- Temperature range: -20 ~ 25℃
- Cooling capacity: 1150W (10℃)

DLSB-5/20 Low Temperature Circulating Pump

R-series Rotary Evaporator (Pilot-scale)

Applications

Large capacity and large opening of evaporating flask give larger evaporation surface.The evaporating flask keeps rotating when it is constantly heated by water bath, and solvent evaporates more efficiently under vacuum condition. It can be used for pilot-scale production in biology engineering, pharmaceutical industry, chemical industry and food processing.It usually works with water circulating vacuum pump, diaphragm vacuum pump, recirculating chiller, constant-temperature circulator, low temperature circulating pump, etc.

Advantages

- Patented technology of double sealing of Teflon (PTFE) and FV rubber ensures the negative pressure level.
- Automatic switch valve makes continuous collection possible without affecting vacuum degree and without stopping distillation.
- Teflon discharge valve is corrosion resistant and contamination free.
- Water bath jacket protecting operator from scalding by hot liquid.

Large LCD display screen, one-touch setting mode

National Patent

Rubber insulation jacket can protect operator from scalding by hot liquid.

Fast-assembly flange: For quick and easy installation

Evaporating flask cap spanner, easy to remove evaporating flask

Sealing gasket

Auxiliary sealing part

Main sealing part

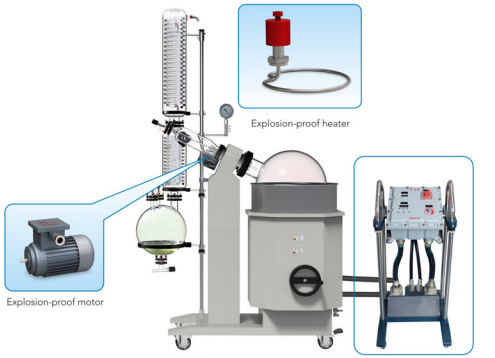
Patented structure in sealing ensuring leakage≈ 2000Pa/h

Note: This picture is a regular type

Rotary Evaporator

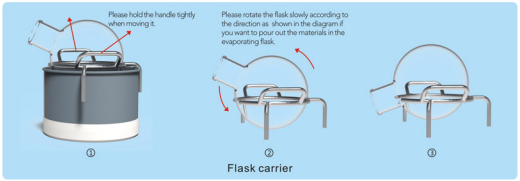
In order to meet the conditions of explosive gas environment, we designed explosion-proof rotary evaporators.

- All of the motors, heaters and electric control boxes are explosion-proof type.The Ex grade is dⅡBT4.
- The electric control box is installed independently and easy to operate.
- Other parts are standard rotary evaporators.



R-1050Ex

Optional Accessories



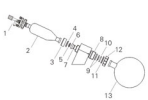
Technical Specifications

Model		R-1005	R-1005Ex	R-1010	R-1010Ex	R-1020	R-1020Ex	R-1050	R-1050Ex
Evaporating flask		5L，flange opening Φ50mm		10L，flange opening Φ95mm		20L，flange opening Φ125mm		50L，flange opening Φ125mm	
Receiving flask (L)		3		5		10		20	
Speed-regulation		DC stepless speed-regulation	Variable frequency stepless speed-regulation	DC stepless speed-regulation	Variable frequency stepless speed-regulation	DC stepless speed-regulation	Variable frequency stepless speed-regulation	DC stepless speed-regulation	Variable frequency stepless speed-regulation
Power Supply		220-240V~，50/60Hz		220-240V~，50/60Hz		3～，380V，50Hz		3～，380V，50Hz	
Overall power (kW)		2.3	3.1	3.8	4.8	6.3		6.3	
Rotation speed (rpm)		20～140	20～140	20～130	20～130	20～130	20～130	20～110	20～110
Power of motor (W)		250	40	250	180	250	180	250	370
Condenser		Vertical type double coil pipe		Vertical type, Main + auxiliary triple-circulating cold traps		Vertical type, Main + auxiliary triple-circulating cold traps			
Bath material		Stainless steel 304				Stainless steel 304			
Temperature range		Rt～99℃				Rt～99℃			
Temperature display		Digital display				Digital display			
Pressure rise rate of vacuum system		20mbar/h				20mbar/h			
Evaporating Speed (L/h)	Water	2.0		3.2		5.0		9.0	
	Ethanol	5.4		8.6		14.3		24.5	
Lifting function		Motorized lift	Manual lift	Motorized lift	Manual lift	Motorized lift	Manual lift	Motorized lift + Manual lift	Manual lift
Elevating stroke (mm)		0～150		0～160		0～190		0～180	
Dimensions (mm)		840W×660D×1090H	840W×660D×1090H	990W×550D×1740H	990W×550D×1740H	1120W×680D×1900H	1195W×740D×2040H	1345W×770D×2230H	1345W×770D×2230H
Explosion-proof control box dimensions (mm)		–	500W×455D×985H	–	500W×455D×985H	–	500W×455D×985H	–	500W×455D×985H
Net Weight (Kg)	Main machine	35	60	61	85	90	115	140	200
	Explosion-proof control box	–	58	–	58	–	58	–	58

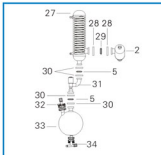
R–1005

Configuration

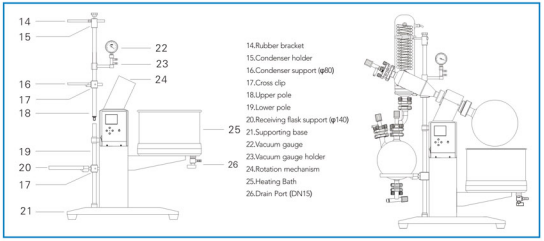
R-1005



1.40# feeding valve
2.Three-way flask
3.Three-way flask locknut
4.Three-way flask locknut ring
5.40# Flange sealing ring
6.Glass rotation axis
7.Sleeve
8.Coupling
9.Vacuum sealing ring
10.Taper ring
11.Evaporating flask locknut ring
12.Evaporating flask locknut
13.Evaporating flask



2.Three-way flask
5.40# Flange sealing ring
27.Condenser
28.50# flange
29.50# flange centering ring
30.40# flange
31.Condenser connector
32.Vacuum release valve
33.Receiving flask
34.15# cock

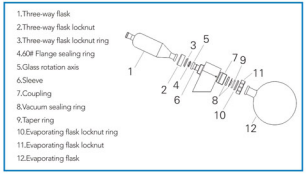


14.Rubber bracket
15.Condenser holder
16.Condenser support (φ80)
17.Cross clip
18.Upper pole
19.Lower pole
20.Receiving flask support (φ140)
21.Supporting base
22.Vacuum gauge
23.Vacuum gauge holder
24.Rotation mechanism
25.Heating Bath
26.Drain Port (DN15)

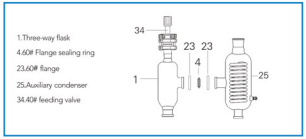
R–1010

Configuration

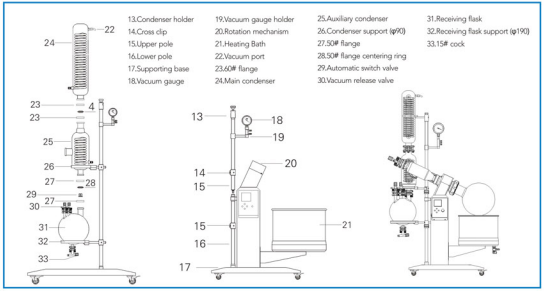
R-1010



1.Three-way flask
2.Three-way flask locknut
3.Three-way flask locknut ring
4,60# Flange sealing ring
5.Glass rotation axis
6.Sleeve
7.Coupling
8.Vacuum sealing ring
9.Taper ring
10.Evaporating flask locknut ring
11.Evaporating flask locknut
12.Evaporating flask



1.Three-way flask
4.60# Flange sealing ring
23.60# flange
25.Auxiliary condenser
34.40# feeding valve

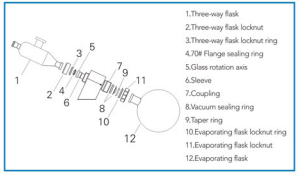


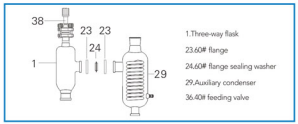
13.Condenser holder
14.Cross clip
15.Upper pole
16.Lower pole
17.Supporting base
18.Vacuum gauge
19.Vacuum gauge holder
20.Rotation mechanism
21.Heating Bath
22.Vacuum port
23.60# flange
24.Main condenser
25.Auxiliary condenser
26.Condenser support (φX)
27.50# flange
28.50# flange centering ring
29.Automatic switch valve
30.Vacuum release valve
31.Receiving flask
32.Receiving flask support (φ190)
33.15# cock

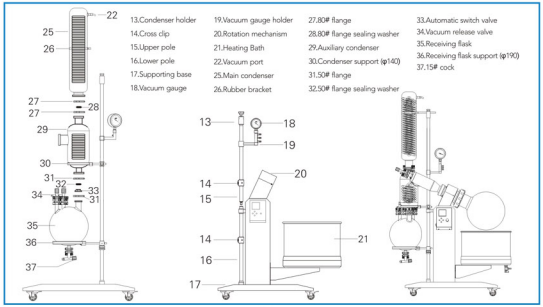
R–1020

Configuration

R-1020



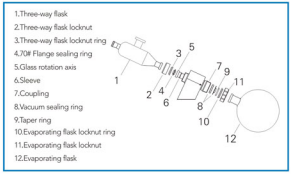


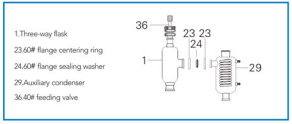


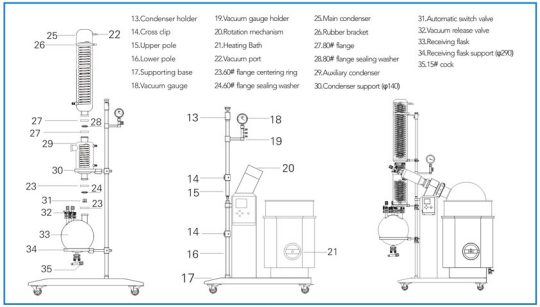
R–1050

Configuration

R-1050

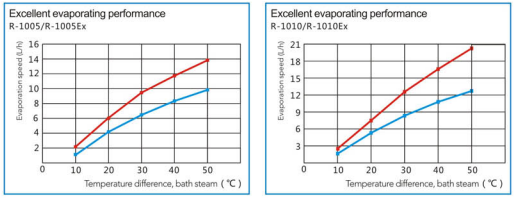






Rotary Evaporator

Performance Curve



The maximum evaporation capacity of common solvents

Evaporation speed (L/h) / Solvent \ Model	R-1005	R-1010	R-1020	R-1050
Water	2.0	3.2	5.0	9.0
Ethanol	5.4	8.6	14.3	24.5
Ethyl acetate	13.5	20.0	28.2	42.0

Note: The temperature difference (vapor temperature) between bath liquid temperature and solvent boiling point is 50℃

Properties of solvents commonly used in Laboratory

Name	Molecular formula	Molecular weight(g/mol)	Evaporation capacity(J/g)	Boiling point(℃)	Saturated vapor pressure at different temperatures		Proposed cooling water temperature(℃)
					Pressure(kPa)	Temperature(℃)	
Methanol	CH_4O	32.0	1227	65	35.70	40	≤20
Ethanol	C_2H_6O	46.0	879	79	17.89	40	≤20
N-propanol	C_3H_8O	60.1	787	97.1	6.954	40	≤20
Iso-propyl alcohol	C_3H_8O	60.1	699	82	14.24	40	≤20
N-pentanol	$C_5H_{12}O$	88.1	595	137.8	0.971	40	≤20
Isoamyl alcohol	$C_5H_{12}O$	88.1	595	129	1.316	40	≤20
Butanol	$C_4H_{10}O$	74.1	619	117.5	2.359	40	≤20
Tert-butanol	$C_4H_{10}O$	74.1	595	82	13.82	40	≤20
Water	H_2O	18.0	2261	100	7.377	40	≤20
Acetone	C_3H_6O	58.1	553	56	56.22	40	≤20
Methyl isobutyl ketone	$C_6H_{12}O$	100.16	353	115.8	9.835	40	≤20
Methyl ethyl ketone	C_4H_8O	72.11	473	79.6	24.28	40	≤20
Benzene	C_6H_6	78.1	548	80.1	24.37	40	≤20
Toluene	C_7H_8	92.2	427	111	7.887	40	≤20
Dimethylbenzene	C_8H_{10}	106.2	389	139	2.542	40	≤20
Chlorobenzene	C_6H_5CL	112.6	377	132	3.520	40	≤20
(TFH)Tetrahydrofuran	C_4H_8O	72.1	410	67	35.064	35	≤20
Acetyl chloride	C_2H_3CLO	78.50	365	51	31.10	20	≤0
Isopropyl ether	$C_6H_{14}O$	102.18	293	68.3	36.66	40	≤20
Dioxane	$C_4H_8O_2$	88.1	406	101	10.38	40	≤20
Carbon tetrachloride	CCL_4	153.84	226	76.8	28.44	40	≤20
Acetonitrile	C_2H_3N	41.05	833	81.8	22.54	40	≤20
Dichloromethane	CH_2CL_2	84.9	373	39.8	30.66	25	≤0
Trichloromethane	$CHCL_3$	119.4	263	61.3	48.05	40	≤20
Cyclopentane	C_5H_{10}	70.08	390	49.3	73.96	40	≤20
Cyclohexane	C_6H_{12}	84.0	389	81	24.63	40	≤20
Pentane	C_5H_{12}	72.1	381	36	56.58	20	≤0
Hexane	C_6H_{14}	86.2	368	69	37.26	40	≤20
Heptane	C_7H_{16}	100.2	373	98	12.36	40	≤20
1.2-dichloroethane	C_2H_4CL	99.0	335	84	20.67	40	≤20
1.1.1-trichloroethane	$C_2H_3CL_3$	133.4	251	74	31.28	40	≤20
1.1.2.2-tetrachloroethane	$C_2H_2CL_4$	167.9	247	146	1.991	40	≤20
pentachloroethane	C_2HCL_5	202.3	201	162	1.255	40	≤20
cis-1.2-dichloroethylene	$C_2H_2CL_2$	97.0	322	60	48.89	40	≤20
trans-1.2-Dichloroethylene	$C_2H_2CL_2$	97.0	314	48	77.33	40	≤20
Trichloroethylene	C_2HCL_3	131.3	264	87	19.15	40	≤20
Tetrachloroethylene	C_2CL_4	165.8	234	121	5.267	40	≤20
Ethyl ether	$C_4H_{10}O$	74.12	389	35	59.06	20	≤0
Isopropyl ether	$C_6H_{14}O$	102.18	318	68.5	36.66	40	≤20
Formic acid	CH_2O_2	46.0	503	100.5	11.40	40	≤20
Acetic acid	$C_2H_4O_2$	60.0	695	118	4.628	40	≤20
Ethyl formate	$C_3H_6O_2$	74.08	407	53.4	60.02	40	≤20
Propyl formate	$C_4H_8O_2$	88.1	369	81.82	22.14	40	≤20
Methyl acetate	$C_3H_6O_2$	74.08	437	56.9	54.07	40	≤20
Ethyl acetate	$C_4H_8O_2$	88.1	394	77	25.44	40	≤20

Rotary Evaporation and Stirring Solution*

Applications

A single Rotary evaporator can be extended to be a stirring and evaporation combination by adding a stirring unit, which can meet the requirements of evaporation, concentration and separation of materials during the processing experiment.

Advantages

- The rotary evaporation unit and the stirring unit are independent which can be activated as needed.
- The material can be heated more evenly after stirring.
- Heating, stirring and vacuum device working together can be used for drying material.

- The stirring function is disabled.
- The rotary function and heating function can be started as needed

Concentration process

- The rotary function unit is disabled.
- The stirring function and heating function can be started as needed.

Drying process

* Customized product

PARTS 3 Glass Reactor

Glass Reactor

Glass Reactor

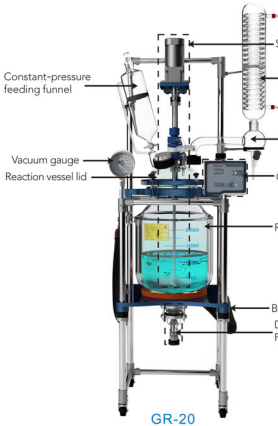
Applications

Speed-regulation glass reactors are mainly used for synthetic reaction, distillation and concentration of different types of materials. We have single wall, double wall and triple wall glass reactors. The reactor can be pumped to a negative pressure state according to some experimental requirements. A constant pressure funnel or an adjusting valve on the feeding bottle allows you to add material to the vessel at a uniform and controlled speed. Condenser helps to recover some materials distillated during reaction. Circulating liquid can be filled into the jacket to heat or cool materials inside. Triple wall glass reactor with two jackets, the inner jacket is for circulating liquid, and the outer layer should be pumped to vacuum condition for thermal insulation.

Advantages

- High borosilicate glass has good physical and chemical properties.
- Wide working temperature range: -80℃ to 200℃.
- It can work under normal pressure and negative pressure, its vacuum degree can reach to 0.095MPa.
- The vessel can withstand the pressure range from -0.1MPa to 0MPa.
- Teflon (PTFE) and FV rubber material cock or discharge valve; Sealing together with PTFE covered O ring.

Configuration



GR-20

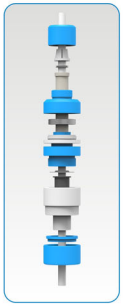
For ⅡB explosive atmospheres, we use dⅡBT4 explosion-proof electrical parts for safety concern.

Explosion-proof control box

Explosion-proof motor

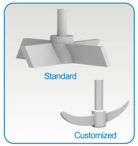
Ex grade is dⅡBT4

National Patent



Stirring shaft

- Excellent sealing
- Durable and corrosion resistant Abrasion resistant, corrosion resistant, long service life



Propeller stirrer

Stirring shaft is PTFE rainforced stainless steel, strong and durable

Stainless steel thermal Insulation hose

Temperature range: -100℃~250℃, can be used for both high and low temperature circulating fluid pipeline

Protective jacket (Optional)

Protective jacket (Optional) (Silicone rubber coat)

Thermal Insulation Jacket (Optional)

For thermal insulation; Designed with window for observation.

Precautions

Maximum working temperature is 200℃. And the maximum temperature difference between the internal and external of the reactor is 80℃.When heating or cooling the reactor, it is recommended to monitor the temperature inside and outside the vessel continuously and heat up or cool down gradually to avoid accidents.

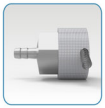
High borosilicate glass composition table

Item	Specifications
Linear thermal expansion coefficient	3.33×10⁻⁶/℃
Silicon dioxide	80.14%(g/g)
Ferric oxide	0.023%(g/g)
Aluminum oxide	2.22%(g/g)
Calcium oxide	0.15%(g/g)
Magnesium oxide	0.026%(g/g)
Potassium oxide	0.077%(g/g)
Sodium oxide	4.36%(g/g)
Diboron trioxide	13.00%(g/g)

Glass Reactor (Desktop)

- 1L, 2L, 3L, 5L volume available
- Designed with vacuum gauge and temperature display unit

Controller



Circulating pipe connector

GR-5(Desktop)

vacuum and temperature display unit

Recommended Solution:

Glass reactor	Temperature control device	Vacuum pump
GR-1	DL-400 ZT-5-200-40H	MP-201 SHB-Ⅲ
GR-2		
GR-3		
GR-5 (Desktop)		

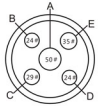
Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure (Mpa)	Dimensions (mm)
GR-1	0.3	1	50-500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	405Wx420Dx1020H
GR-2	0.6	2				405Wx420Dx1020H
GR-3	0.9	3				405Wx420Dx1020H
GR-5(Desktop)	1.5	5				535Wx450Dx1230H

Glass Reactor (5L floor type)

GR-5 (floor type)

GR-5Ex (floor type)



A) 50# flange , stirring shaft
B) 24# standard ground, connected to temperature sensor
C) 29# standard ground, connected to constant-pressure funnel
D) 24# standard ground, liquid charging port
E) 35# ball milling port, connected to condenser

5L reactor lid layout

Recommended Solution:

Glass reactor	Temperature control device	Vacuum pump
GR-5 (floor type)	DL-30-300 ZT-5-200-40H	MP-201 SHB-Ⅲ
GR-5Ex (floor type)		

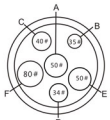
Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure (Mpa)	Dimensions (mm)	Net Weight (Kg)
GR-5 (floor type)	1.5	5	50-500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	591Wx520Dx1594H	34
GR-5Ex (floor type)							50

Glass Reactor (10L)

- Lockable casters for easy moving
- Compact structure saves space
- Proper height of drain valve for easy discharging

GR-10



A) 50# flange , stirring shaft
B) 35# standard ground, connected to temperature sensor
C) 40# standard ground, connected to constant-pressure funnel
D) 35# standard ground, liquid charging port
E) 50# ball milling port, connected to condenser
F) 80# standard ground, solid feeding port

10L reactor lid layout

Recommended Solution:

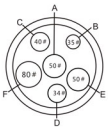
Glass reactor	Temperature control device	Vacuum pump
GR-10 GR-10Ex	SY-20	MP-201 SHB-Ⅲ
	SY-20-250	
	ZT-20-200-30H	
	DL10-2000	
	DL30-700	

Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure	Power (reduction ratio:3) (w)	Drain port ground clearance (mm)	Unit height (mm)	Net Weight (Kg)
GR-10	3	10	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	90	355	1780	48
GR-10Ex						180			61

Glass Reactor (20L~50L)

GR-20



A) 50# flange, stirring shaft
B) 35# standard ground, connected to temperature sensor
C) 40# standard ground, connected to constant-pressure funnel
D) 35# standard ground, liquid charging port
E) 50# ball milling port, connected to condenser
F) 80# standard ground, solid feeding port

20L~50L reactor lid layout

Recommended Solution:

Glass reactor	Temperature control device		Vacuum pump
	Model	Temperature range	
GR-20 GR-20Ex	SY-20	RT+5℃~200℃	SHB-B95 MP-401
	SY-20-250	RT+5℃~250℃	
	ZT-20-200-30H	-30℃~200℃	
	DL10-3000	-10℃~25℃	
GR-30 GR-30Ex	SY-50	RT+5℃~200℃	
	SY-50-250	RT+5℃~250℃	
	ZT-50-200-30H	-30℃~200℃	
	DL10-3000	-10℃~25℃	
GR-50 GR-50Ex	SY-50	RT+5℃~200℃	
	SY-50-250	RT+5℃~250℃	
	ZT-50-200-30H	-30℃~200℃	
	DL10-3000	-10℃~25℃	

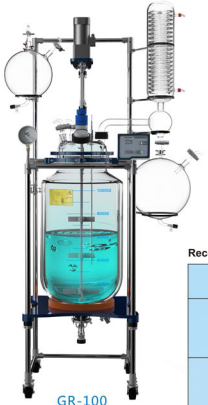
Note: This is standard model

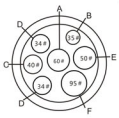
Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure	Power (reduction ratio:3) (w)	Drain port ground clearance (mm)	Unit height (mm)	Net Weight (Kg)
GR-20	6	20	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	90	335	1910	67
GR-20Ex						180			80
GR-30	10	30				90	310	2030	72
GR-30Ex						180			83
GR-50	16	50				140	320	2050	82
GR-50Ex						180			95

Glass Reactor

Glass Reactor (80L~100L)





A) 60# flange, stirring shaft
B) 35# standard ground, connected to temperature sensor
C) 40# standard ground, connected to constant-pressure funnel
D) 34# standard ground, liquid charging port
E) 50# ball milling port, connected to condenser
F) 95# flange mouth, solid feeding port

80L~100L reactor lid (Φ290) layout

Recommended Solution:

Glass reactor	Temperature control device		Vacuum pump
	Model	Temperature range	
GR-80 GR-80Ex	SY-100	RT+5℃~200℃	SHB-B95 MP-401
	SY-100-250	RT+5℃~250℃	
	ZT-100-200-30H	-20℃~200℃	
	DL10-6000	-10℃~25℃	
GR-100 GR-100Ex	SY-100	RT+5℃~200℃	
	SY-100-250	RT+5℃~250℃	
	ZT-100-200-30H	-30℃~200℃	
	DL10-6000	-10℃~25℃	

Note: This is standard model

Technical Specifications

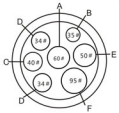
Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power supply	Operating pressure	Power (reduction ratio:3) (w)	Drain port ground clearance (mm)	Unit height (mm)	Net Weight (Kg)
GR-80	24	80	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	250	340	2360	110
GR-80Ex						370			124
GR-100	30	100				250			119
GR-100Ex						370			132

Glass Reactor (80L~150L)

National Patent

new

- Lockable heavy duty casters.
- The maximum diameter of the stirring paddle is 25mm, the bigger diameter, the stronger stirring.
- SUS316 tray can receive and collect dropping materials preventing any pollution.



A) 60# flange, stirring shaft
B) 35# standard ground, connected to temperature sensor
C) 40# standard ground, connected to constant-pressure funnel
D) 34# standard ground, liquid charging port
E) 50# ball milling port, connected to condenser
F) 95# flange mouth, solid feeding port

80L~150L reactor lid layout

Note: This is standard model

Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power supply	Operating pressure	Power (reduction ratio:3) (w)	Drain port ground clearance (mm)	Unit height (mm)
GRF-80	24	80	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	250	380	2390
GRF-80Ex						370		
GRF-100	30	100				250		
GRF-100Ex						370		
GRF-150	45	150	50~300			400		2630
GRF-150Ex						750		

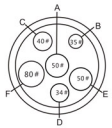
Glass Reactor (GRS)

- Corrosion-resistant stainless steel frame.
- SUS316 tray can receive and collect materials preventing any pollution.

National Patent

new

GRS-20Ex



A) 50# flange, stirring shaft
B) 35# standard ground, connected to temperature sensor
C) 40# standard ground, connected to constant-pressure funnel
D) 35# standard ground, liquid charging port
E) 50# ball milling port, connected to condenser
F) 80# standard ground, solid feeding port

10L~50L reactor lid layout

Note: The reactor lid structure is as same as GR series reactor.

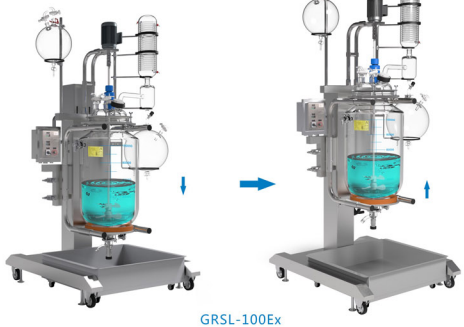
Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure	Power (reduction ratio:3) (w)	Drain port ground clearance (mm)	Overall height (mm)
GRS-20	6	20	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	90	550	2155
GRS-20Ex						180		
GRS-30	10	30				90		2360
GRS-30Ex						180		
GRS-50	16	50				140		
GRS-50Ex						180		

Glass Reactor (GRSL)

- Corrosion-resistant stainless steel frame.
- Lifting Reaction system for easy operating and cleaning.
- SUS316 tray can receive and collect dropping materials preventing any pollution.

new



GRSL-100Ex

Note: The reactor lid is as same as GR-100 lid.

Technical Specifications

Model	Jacket capacity (L)	Reaction glass vessel capacity (L)	Stirring speed (rpm)	Power Supply	Operating pressure	Power (reduction ratio:3) (w)
GRSL-20	6	20	50~500	220-240V~, 50/60Hz	Ordinary pressure or negative pressure	90
GRSL-20Ex						180
GRSL-30	10	30				90
GRSL-30Ex						180
GRSL-50	16	50				140
GRSL-50Ex						180
GRSL-80	24	80				250
GRSL-80Ex						370
GRSL-100	30	100				250
GRSL-100Ex						370

Lifting Glass Reactor (GRL)

- The reaction vessel and the lid can be separate, the glass vessel can be lifted up, and can be angled 120 degree both sides, which makes it more convenient to operate and clean;
- Openings are sealed with flanges, ensuring higher vacuum degree, easy to disassemble.

National Patent

GRL–10

Lifting

Rotating

Technical Specifications

Model	GRL–10 (Ex)	GRL–20 (Ex)	GRL–30 (Ex)	GRL–50 (Ex)
Glass material	High borosilicate glass			
Sensor material	Stainless steel coated by fluorine, double anti-corrosion			
Temperature range	–80~200℃			
Speed control	Frequency speed control			
Bearable temperature difference	60℃(Triple wall), 80℃ (Double wall)			
Diameter of circulating fluid inlet and outlet	Dn15			
Power supply	220-240V~, 50/60Hz			

Customized Filter Glass Reactor*

Applications

Pilot-scale solid-liquid separation process.

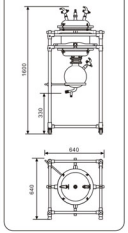
Advantages

- Stainless steel supporting framework with beautiful appearance and strong corrosion resistance;
- High borosilicate glass vessel with strong corrosion resistance and wide range of application, the filtering process is visible.
- Various options of filter plate.
- The filter plate is convenient to remove and easy to clean and maintain.

Technical Specifications

Name		Filter Glass Reactor
Model		CLZZ
Filter Vessel	Capacity (L)	30
	Vessel Diameter (mm)	ϕ316
Receiving Flask Capacity (L)		20
Glass Material		High Borosilicate 3.3
Material of Frame and Connection Parts		SUS304
Glass Vessel Bearable Temperature Range （℃）		–80~200℃
Operating pressure （MPa）		Ordinary pressure or negative pressure
Reactor lid openings	Liquid Charging Port	40 # Flange
	Vacuum Port	24# standard ground
	exhaust vent	24# standard ground
Sand Core	Material	High Borosilicate 3.3
	specification	Optional
Material of Filter Plate		PTFE
Drain Port Ground Clearance (mm)		330
Dimensions (mm)		650W×650D×1600H

Dimensions(mm)



* Customized products

Customized Rectification Reactor*

Applications

Pilot-scale solvent distillation and recovery.

Advantages

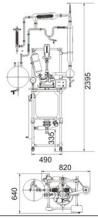
- Stainless steel supporting frame with strong corrosion resistance.
- Horizontal triple coil condenser with large condensing surface and high cooling efficiency.
- Distillation column can be filled with different material accordingly, providing a wide range of application.

Operation panel

Technical Specifications

Model	GR-20T
Glass vessel capacity (L)	20
Jacket capacity (L)	6
Motor rated power (W)	90
Stirring speed (rpm)	50~500
Power Supply	220-240V~,50Hz
Jacket heat exchanging area (㎡)	0.44
Condenser cooling area (㎡)	0.25
Glass material	High borosilicate
Jacket pressure (MPa)	<0.08
Pressure in the vessel (MPa)	-0.1~0
Diameter of circulating fluid inlet and outlet	DN15
Reactor lid openings	6
Constant-pressure funnel (L)	2
Drain port ground clearance (mm)	335
Glass vessel temperature range	-80~200℃
Material of frame and connection parts	SUS304

Dimensions (mm)



* Customized products

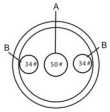
Dispenser*

Applications

Pilot-scale liquid extraction.

Advantages

- Adjustable stirring speed can speed up the contact of liquids and mix the material evenly;
- Teflon + FV material cock type drain valve, discharging speed can be controlled;

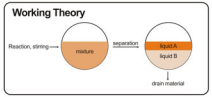


A) 50# flange, stirring shaft
B) 34# standard ground, liquid charging port
C) 34# standard ground, exhaust vent

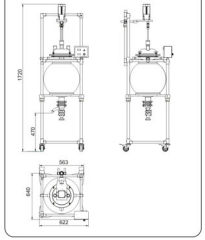
Technical Specifications

Name		20LDispenser
Model		GFY-20L
Capacity (L)		20
Glass Material		High Borosilicate 3.3
Material of Frame and Connection Parts		SUS304
Filter Reactor Tolerable Temperature （C）		-80~200
Operating pressure （MPa）		Ordinary pressure or negative pressure
Motor	Power (W)	90
	Speed control	Frequency speed control
	Rotating speed	50~500rpm
Reactor lid openings	Stirring port	50# flange
	Liquid charging port	34# standard ground
	Air outlet	34# standard ground
Stirrer Sealing		Anticorrosion, wear-resistant stir bearing
Power supply		220~240V~,50Hz
Drain Port Ground Clearance (mm)		460mm
Dimensions (mm)		622W x 640D x 1720H

Working Theory



Dimensions (mm)



* Customized products

PARTS 4 Pressure control

MP Diaphragm Vacuum Pump

Applications

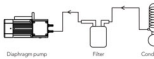
MP series diaphragm vacuum pump provides negative pressure condition for processes of evaporation, distillation, crystallization, drying, sublimation, reduced pressure filtration etc. It can be used to extract a variety of highly toxic, flammable and explosive, strong acid, and alkali sample.

Advantages

- A substitute for water circulating vacuum pump and rotary vane vacuum pump.
- No need of any working medium. No friction between working parts.
- Vacuum level can be adjusted according to experiment requirements.
- All parts that contacting gases are made of PTFE + FV rubber with chemical resistance.
- Valve plate adopts imported materials.
- Motor is supplied by famous manufacturer.
- With reasonable design, transmission runs smoothly.
- With small volume and light weight, easy to move.Saving space.


filter

Filter is equipped between gas pipelines in order to prevent entry of solid particles and water into pump.




MP–201

National Patent


MP-401

Filter bottle can prevent entry of solid particles and water into pump.


Imported PEEK valve plate and Teflon diaphragm can avoid gas corrosion.


Vacuum regulator can adjust vacuum degree as needed.


Muffler can reduce noise.

Technical Specifications

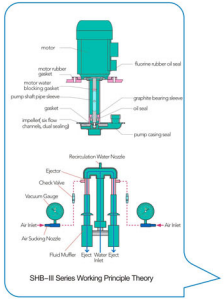
Model	Motor Power (W)	Power Supply	Rotation Speed (rpm)	Inlet Diameter (mm)	Ultimate Vacuum (MPa) / Extreme pressure(mbar)	Pumping Speed (L/min)	Dimensions (mm)	Net Weight (Kg)
MP–201	180	220–240V~, 50Hz	1300	Φ6	0.095/50	25	300W × 230D × 150H	10
MP–401	300	220–240V~, 50Hz	1300	Φ7	0.095/50	45	195W × 440D × 290H	23

SHB-III/IIIA/IIIS Water Circulating Vacuum Pump

Features

Water Circulating Vacuum Pump takes circulating water as working fluid to create negative pressure by fluid jet.It can provide negative pressure condition for the processes of evaporation, distillation, crystallization, drying, sublimation, pressure-reducing filtration and so on, particularly be suitable for labs and small scale test of industries such as universities and colleges, scientific research institutes, chemical industry, pharmacy, biochemistry, foodstuff, pesticide, agricultural engineering, biological engineering.

- Save water resources.
- Save more than 35% of electricity than other types of vacuum pump.
- Specialized fluid muffler can make the vacuum degree higher by reducing the gas in water and make it quieter by reducing the friction between gas and fluid.
- Equipped with double-tap and double-gauge, it can be used alone or in parallel.
- Resistant to acid, alkali and solvents.
- High quality motor with fluorine rubber sealing which can avoid the invasion of corrosive gas.
- Replace water regularly to keep water clean to ensure perfect vacuum condition.
- Shorten the water replacing period when it is used to pump corrosive gas.
- SHB-III: Shell, water tank, ejector, tee junction, check valve and suction nozzle are made of PP material. Pump body and impeller (six flowing passages, dual sealing) are made of SUS304.
- SHB-IIIA: Ejector and suction nozzle are made of SUS304. Other components are the same as that of SHB-III.
- SHB-IIIS: Pump body is made of PP material which is more suitable for acid gas. Other components are the same as that of SHB-III.



SHB-III Series Working Principle Theory

SHB-Ⅲ

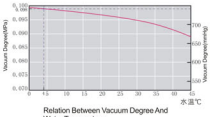
SHB-IIIG Water Circulating Vacuum Pump

Features

- Spray Paint Teflon (PTFE) plus FV Rubber on the ejector and suction nozzle. Hose is made of fluorine rubber.
- Better corrosion resistance and more reliability and longer service life.

Model	SHB-Ⅲ/ⅢA/ⅢS/ⅢG
Power (W)	180
Power Supply	110V~, 60Hz or 220~240V~, 50/60Hz
Flow (L/min)	80
Lift (m)	10
Ultimate Vacuum (MPa)	0.098 (2KPa)
Single Tap Air Suction Amount	10L/min
Number of Tap	2
Safety	Check valve, over-current protection
Water Tank Capacity (L)	15
Water Tank Material	PP
Dimensions (mm)	385W × 280D × 420H
Net Weight (kg)	11

SHB-ⅢG



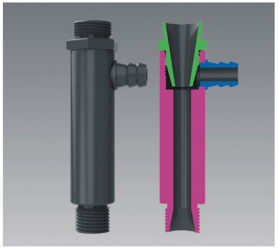
Relation Between Vacuum Degree And Water Temperature

Main parts comparison

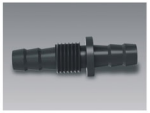
Material / Model / Part Name	SHB-Ⅲ	SHB-ⅢA	SHB-ⅢS	SHB-ⅢG
Ejector	PP	SUS304	PP	Copper+PTFE
Tee Junction	PP	PP	PP	PP
Check Valve	PP+Copper	PP+Copper	PP+Copper	PP+Copper
Suction Nozzle	PP	SUS304	PP	Copper+PTFE
Pump Body	SUS304	SUS304	PP	SUS304
Impeller	SUS304	SUS304	PA	SUS304
Connection Pipe	NR	NR	NR	FPM

SHB-ⅢA

SHB-IIIG Main Parts



Spray Paint PTFE Ejector



Spray Paint PTFE Air Sucking Nozzle

Fluorine Rubber Hose

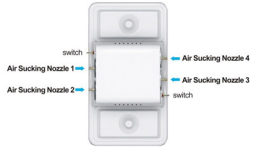
Complete Set

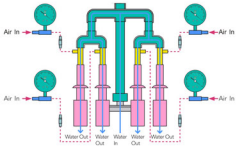
DL-400　　R-1001VN　　SHB-Ⅲ

SHB-IV Water Circulating Vacuum Pump

Features

- Equipped with two same sides.
- It is an extension model of SHB-III. Features and materials are the same as that of SHB-III.
- Four taps vacuumize at the same time and four gauges display independently. Four operators can do experiments at the same time, which reduces the laboratory cost.
- It is convenient for the teacher to explain and demonstrate to students during teaching.





SHB-IV Working Theory

Technical Specifications

Model	SHB-Ⅳ
Power (W)	250
Power Supply	110V~,60Hz or 220-240V~,50/60Hz
Flow (L/min)	80
Lift (m)	10
Ultimate Vacuum (MPa)	0.098 (2KPa)
Single Tap Air Suction Amount	10L/min
Number of tap	4
Safety	Check valve, over-current protection
Water Tank Capacity (L)	18
Water Tank Material	PP
Dimensions (mm)	470W × 260D × 516H
Net Weight (kg)	17

SHB-Ⅳ

SHB-B95 Water Circulating Vacuum Pump

Features

- Widely applied to research experiments,small scale tests and small scale production with the process of evaporation, distillation, crystallization, drying, sublimation, pressure-reducing filtration.
- Working principle is the same as that of desk-top vacuum pump.
- Compared with desk-top vacuum pump, larger air sucking amount can meet negative pressure requirements of large air sucking amount.
- Five taps can be used alone or in parallel. A five-way adapter can connect five taps to increase air sucking amount , which can meet the experiment requirements of large scale rotary evaporator or reactor.
- Motor is supplied by famous manufacturer with fluorine rubber sealing which can avoid the invasion of corrosive gas.
- Water tank PVC material. Housing adopts carbon steel and the surface adopts electrostatic spraying.
- Copper ejector; Tee junction, check valve and suction nozzle are PP material.
- Pump body and impeller adopt stainless steel 304.
- Equipped with casters for convenient moving.
- Replace water regularly to keep water clean to ensure perfect vacuum condition.
- Shorten the water replacing period when it is used to pump corrosive gas.
- SHB-B95A: Housing adopts stainless steel. Other components are the same as that of SHB-B95.

SHB–B95

Technical Specifications

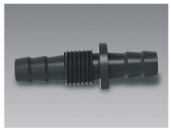
Model	Power (W)	Power Supply	Flow (L/min)	Lift (m)	Safety	Housing Material	Ultimate Vacuum (MPa)	Single Tap Air Suction Amount	Number of tap	Water Tank Capacity (L)	Water Tank Material	Dimensions (mm)	Weight (kg)
SHB–B95	550	110V~ 60Hz or 220-240V~, 50/60Hz	100	12	Check valve, over-current protection	electrostatic spraying	0.098 (2KPa)	10L/min	5	57	PE	450W × 350D × 820H	36
SHB–B95A						SUS304			5	57		450W × 350D × 820H	36

SHB-B95T Water Circulating Vacuum Pump

Features

- Updated from SHB-B95A, function and material are the same as that of SHB-B95A.
- Spray Paint Teflon (PTFE) on the ejector and suction nozzle. Hose is made of fluorine rubber.
- Better corrosion resistance and more reliability and longer service life.

SHB–B95T



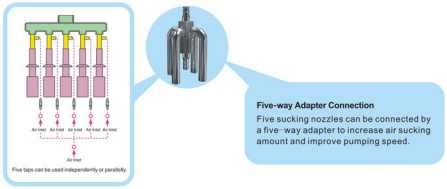
Spray Paint PTFE Air Sucking Nozzle

Fluorine Rubber Hose

Spray Paint PTFE Ejector

Technical Specifications

Model	Power (W)	Power Supply	Flow (L/min)	Lift (m)	Safety	Housing Material	Ultimate Vacuum (MPa)	Single Tap Air Suction Amount (L/min)	Number of tap	Water Tank Capacity (L)	Water Tank Material	Dimensions (mm)	Net Weight (kg)
SHB–B95T	550	110V~ 60Hz or 220-240V~, 50/60Hz	100	12	Check valve, over-current protection	SUS304	0.098 (2KPa)	10	5	57	PE	450W × 350D × 820H	36



SHB-B95 Series Five-way Adapter Usage

SHB-B88 Water Circulating Vacuum Pump

Features

- Three taps can be used alone or in parallel.
- Two of the three taps are connected with a vacuum regulator to adjust vacuum level. Two vacuum gauges display vacuum degree separately.
- The third tap works separately and vacuum degree can not be adjusted. Its vacuum degree is equal to or higher than vacuum level of the other two taps.
- Housing adopts stainless steel 304.
- Other components are as same as SHB-B95.

SHB-B88

Technical Specifications

Model	Power (W)	Power Supply	Flow (L/min)	Lift (m)	Safety	Housing Material	Ultimate Vacuum (MPa)	Single Tap Air Suction Amount (L/min)	Number of	Water Tank Capacity (L)	Water Tank Material	Dimensions (mm)	Net Weight (kg)
SHB-B88	250	110V~, 60Hz or 220-240V~,50/60Hz	80	10	Check valve, over-current protection	SUS304	0.098 (2KPa)	10	3	40	PE	280W×350D×880H	26

DLSB-ZC Low Temperature Recirculating Vacuum Pump

Features

A newly designed product based on Cooling Liquid Circulating Pump and Water Circulating Vacuum Pump, it combined the functions of both pumps and can be used with rotary evaporators to improve distillation efficiency and recovery.

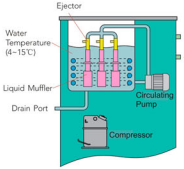
- It centralizes vacuum and refrigeration, and combines features of cooling liquid circulating pump and vacuum pump. It can provide vacuum condition and cooling condition for rotary evaporator simultaneously.
- It is equipped with refrigerating circulating system which can keep water temperature around 4℃ to guarantee vacuum pump in perfect working condition and ensure the best negative pressure level.
- Designed with three taps, it can provide negative pressure condition for three equipments at the same time. Equipped with three vacuum gauges, negative pressure level can be monitored visually.
- Evaporator is made of stainless steel which is corrosion-resistant.

Technical Specifications

Model		DLSB-ZC
Temperature Range*		-10 ~ 25 ℃
Ambient temperature		5 ~ 25℃
Temperature Stability		± 2℃
Overall Power (W)		1650
Power Supply		220-240V~, 50Hz
Bath Capacity (L)		20
Refrigeration Capacity (W)		600 ~ 2550
Circulating Pump	Power (W)	280
	Pressure (bar)	1.0
	Flow Rate (L/min)	30
Ultimate Vacuum (MPa)		0.098 (2KPa)
Number of tap		3
Single Tap Air Suction Amount (L/min)		10
Dimensions (mm)		595W×475D×925H

* Not higher than room temperature minus 5℃

DLSB-ZC



DLSB-ZC Working Principle

PARTS 5 New Products

Solvent Recovery System

Features

A solvent recovery system is designed for recycling used or waste organic solvents after pre-process.

- It is mainly used to recycle gases like paraffin, aromatic hydrocarbon, ketones, esters, ethers alcohols, nitrogen-containing compound, etc. in fields like petrochemical industry, pharmacy, coating, artificial leather, electronic, color gold etching, sports equipments, plastics, precision casting and so on.
- Save cost.
- Protecting environment and human health.

RJHS-20

RJHS-40

RJHS-2020

Technical Specifications

Model	Min. No-load Temperature*	Temperature Range	Ultimate Vacuum (mbar)	Ambient Temperature (℃)	Relative Humidity (%)	Power Supply	Temperature Display Mode	Max. Pumping Speed (L/min)	Overall Power (W)	Overall Current (A)	Dimensions (mm)	Net Weight (Kg)
RJHS-2020	−10℃	−10~20℃	50	≤25	≤60	220-240V~, 50Hz	Digital	25	545	2.5	405W × 660D × 892H	61
RJHS-20	Low Temperature (Optional)		50	≤25	≤60	220-240V~, 50Hz	/	25	180	0.82	570W × 420D × 550H	19
RJHS-40	Low Temperature (Optional)		50	≤25	≤60	220-240V~, 50Hz	/	45	250	1.2	320W × 450D × 570H	25

* Working Temperature ≤ Room Temp -5℃

Intelligent Biochemistry Reaction Apparatus

Features

Widely used for process control during chemical and biopharmaceutical experiments,displaying temperature, PH Value, viscosity, stirring speed in real time. The feeding speed and feeding time can be controlled.Remote control can be realized when connected with the computer, which can improve working environmental .

National Patent

ZN–3000

Technical Specifications

Model	Temperature Range	Temperature Stability	Rotating Speed	Rotation Speed Accuracy	PH Range	Dimension (mm)
ZN–3000	–50℃ – 300℃	± 1℃	10 – 300 rpm	± 5 rpm	0 – 14	215W × 460D × 570H
PH Accuracy	Feeding Speed	Feeding Speed Accuracy	Feeding Time	Torque Display	Programming Section	Net Weight (kg)
± 0.1	0 – 100 rpm	± 0.4 rpm	0 – 9999 min	0 – 10 N • m	90	22

Complete Set

ZN-3000+GR Reactor series + Diaphragm Vacuum Pump

Test Data and Result

Test Data of Stability（ Acid Water Solution ）

Time	Temperature (℃)	Rotation Speed (rmp)	Reaction Temperature	Viscosity	PH Value
00:00:00	56:30	350.00	53.00	64.00	6.65
00:16:00	51:60	350.00	50.00	65.00	6.66
00:32:00	51:70	350.00	49.00	64.00	6.66
00:48:00	60:70	350.00	58.00	64.00	6.66
01:04:00	59:60	350.00	58.00	64.00	4.28
01:20:00	60:40	350.00	58.00	63.00	4.28
01:36:00	60.00	350.00	58.00	63.00	4.27
01:52:00	60:30	350.00	58.00	63.00	4.26
02:08:00	60:90	350.00	58.00	64.00	4.25
02:24:00	60:00	350.00	58.00	65.00	4.25
02:40:00	60:60	350.00	58.00	63.00	4.24
02:56:00	60:60	350.00	58.00	64.00	4.24
03:12:00	60:20	350.00	58.00	66.00	4.24
03:28:00	60:50	350.00	58.00	63.00	4.24
03:44:00	60:00	350.00	58.00	63.00	4.24
04:00:00	60:50	350.00	58.00	64.00	4.24

Test Result

Type Test Result of the Unit

1. Rotation Speed 200-1500rpm, Fluctuation Range +/-10rmp
2. PH Range 0.00-14.00PH, Fluctuation Range +/-0.06PH
3. Temperature Range 0.0-300.0℃, Permissible Deviation +/-0.5PH℃
4. Torque Range 0.0-2000.0N • m , Fluctuation Range +/-4

PARTS 6 Stirrer

Thermostatic Magnetic Stirring Bath

Features

It can be used as water bath or oil bath. Built-in strong magnetic stirrer in the bath.

- Stainless steel 304 heater.
- The magnetic stirring system drives the stirrer to rotate synchronistically, so that the solution in the bath can be heated and stirred evenly.
- DC brushless motor ensures stable performance and continuous working.
- High temperature magnet can continuously work at 300℃ without losing magnetism.
- PID temperature controller ensures accurate temperature control.
- Key setting and digital display make it easy to operate.
- HWCL-3 and HWCL-5 are equipped with two sensors make bath temperature and container temperature display alternately.

National Patent

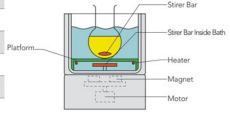
HWCL-1

HWCL-3

HWCL-5

Technical Specifications

Model	HWCL-1	HWCL-3	HWCL-5
Temperature Range	Room Temperature+5～200℃		
Temperature Stability	±1℃		
Temperature Display	Keypad Input, Digital Display		
Stirring Speed Setting	Knob Setting		
Stirring Speed (rpm)	0～2000		
Bath Dimensions (mm)	Φ140×90	Φ220×110	Φ254×130
Bath Capacity (L)	1	4	6.5
Heating Power (W)	300	500	1050
Max. Flask can be placed (ml)	500	3000	5000
Power Supply (V/Hz)	110V～, 60Hz or 220-240V～, 50/60Hz		
Dimensions (mm)	190W×200D×190H	260W×280D×230H	260W×280D×260H
Net Weight (Kg)	3	5	6



Interior Structure

High-Speed Digital Over-head Stirrer (Digital display)

Features

It is used for efficient mixing and stirring of materials in laboratory.

- Digital LCD display.
- Jog-Shuttle control system ensures uniform stirring.
- Over-current and over-temperature protection.
- Timer-end alarm function.
- Error alarm function.
- Height of stirring paddle can be adjusted.
- Chrome-plated chuck is corrosion-resistant.

"CHS-30D" Package-set: (1) Stainless Steel Stirring Paddle (Blade Φ50mm)/ one set
(2) Clamp/one piece
(3) Standard Plate Stand Pole (φ16×L800mm, Plate w20×d35cm)/one set
"CHS-100D" Package-set: (1) Stainless Steel Stirring Paddle (Blade Φ70mm)/one set
(2) Clamp/one piece
(3) Standard Plate Stand Pole (φ23×L1000mm, Plate w30×d40cm)/one set

CHS-100D

Technical Specifications

Model & Stirring Capacity	"CHS-30D" Max. 10Lit.	"CHS-100D" Max. 20Lit.
Maximum Viscosity	10000 mPas	50000 mPas
Maximum Torque	85 Ncm	145 Ncm
Speed Range & Resolution	200～3, 000rpm, 1rpm-display/ 1 rpm-control	
Motor	Worm-Geared DC Motor	
Motor Power (Input/Output)	83/75W, 1/10HP	130/120W, 1/6HP
Timer & Alarm	99hr 59min (with continuous run), Error status & Timer-end	
Display	Digital LCD with Back-Light Function	
Controller	Digital Feedback Controller with Jog Shuttle Switch (Turn + Push)	
Max. Impeller Shaft Diameter	8mm	
Permissible Temp. & Humidity	0～40℃, 80%	
Safety	Overload & Heat Protector for Motor	
Material	ABC and Aluminium	
Dimensions & Weight	90×145×h180mm, 4.5kg	90×145×h180mm, 5.3kg
Packing Size & Gross Weight	320×300×h180mm, 5kg	320×300×h180mm, 8kg
Power	85W	130W
Power Supply	220-240V～, 50/60Hz	

High-Speed Digital Over-head Stirrer

Features

It is used for efficient mixing and stirring of materials in laboratory.

- Used for stirring low to medium viscous material
- Analog input of signals
- Maximum stirring speed: 3000rpm
- Smooth start and change of stirring speed
- Adjustable stirring paddle height
- Over-temperature and over-current protection function
- Chrome-plated chuck is corrosion-resistant

"CHS-50A"Package-set: (1) Stainless Steel Stirring Paddle (Blade Φ 50mm) / one set
(2) Clamp/one piece
(3) Safety Stand Pole (Φ 23×L800mm, Plate w34×d29cm) /one set
"CHS-120A"Package-set: (1) Stainless Steel Stirring Paddle (Blade Φ 70mm) /one set
(2) Clamp/one piece
(3) Safety Stand Pole (Φ 23×L1000mm,Plate w34×d29cm) /one set

CHS-50A

Technical Specifications

Model & Stirring Capacity	"CHS-50A" Max. 10Lit.	"CHS-120A" Max. 20Lit.
Maximum Viscosity	10000 mPas	50000 mPas
Maximum Torque	85 Ncm	145 Ncm
Speed Range & Resolution	0 – 3,000rpm,Worm-Geared DC Motor	
Controller	83/75W, 1/10HP	130/120W, 1/6HP
Motor Power (Input/Output)	Analog Phase Controller	
Max. Impeller Shaft Diameter	8mm	
Permissible Temp. & Humidity	0 ~ 40℃, 80%	
Safety	Over-heat & over-current Protector for Motor	
Material	ABC and Aluminium	
Dimensions & Weight	90×145×h180mm, 4.5kg	90×145×h180mm, 5.3kg
Packing Size & Gross Weight	320×300×h180mm, 5kg	320×300×h180mm, 8kg
Power	85W	130W
Power Supply	220-240V~, 50/60Hz	

Digital Hotplate Stirrer (Digital display)

Features

It is used for efficient mixing and stirring of materials in laboratory.

- Completely closed control system avoiding interference and ensuring effective temperature control.
- Heating or stirring function can be started as needed.
- Safty: Over-temperature and over-current.
- Hotplate is heated evenly, and temperature difference is less than 10%.

"CHS-20D"Package-set: (1) External Temperature Sensor/ one piece
(2)Stainless Steel Support Pole Φ 12×L450mm/one piece
(3) Holder + Clamp for Temperature Sensor/ one set
"CHS-30D"Package-set: (1) External Temperature sensor/ one piece
(2) Stainless Steel Support Pole Φ 12×L450mm/ one piece
(3) Holder + Clamp for Temperature sensor/ one set

CMS-20D

Technical Specifications

Model & Plate Size		"CMS-20D"180×180mmPlate	"CMS-30D" 260×260mmPlate
Material	Body	Powder Coated Aluminum	Powder Coated Steel
	Plate	Ceramic Coated Aluminum (Chemical/ Acid Resistance, Easy to Clean)	
Stirring Capacity & Motor Power		Max. 20 Lit., 9/4W	
Stirring Speed & Min.Stirring Speed Control		80 – 1, 500rpm, 5rpm	
Temperature Range & Accuracy		Max. 380℃, ±0.3℃ at Set Temperature	
Temperature Control		0.1℃-Display, 0.5℃-control	
Temperature Uniformity		Specially Designed Heating Module: Temperature Difference ≤10%	
Heating Power		600W	1, 2kW
Timer & Alarm		99hr 59min (Continuous Running), Error Status & Timer-end	
Display		Digital LCD Display	
Controller		Digital Feedback Controller with Jog-Shuttle Switch (Turn + Push)	
Stirrer Bar		3cm bar-included, up to 5cm bar	
Safety		Over-temperature and Over-current	
Ambient Temperature & Relative Humidity		RT+5 – 50℃, 85%	
Dimensions & Weight		206×307×h99mm, 3.3kg	268×387×h99mm, 3.5kg
Packing Size & Gross weight		400×280×h200mm, 5kg	430×320×h200mm, 5kg
Power Supply		220-240V~, 50/60Hz	

Premium Hotplate Stirrer

Features

It is used for efficient mixing and stirring of materials in laboratory.

- Superior linearity for temperature control & stirring speed by PWM control.
- Choosing heating or stirring function according to requirements.
- Maximum temperature up to 380℃
- Smart body design, made by aluminum die-casting.
- Ceramic coated plate is resistant to chemical materials like strong acid and alkali.

CMS-20A

CMS-30A

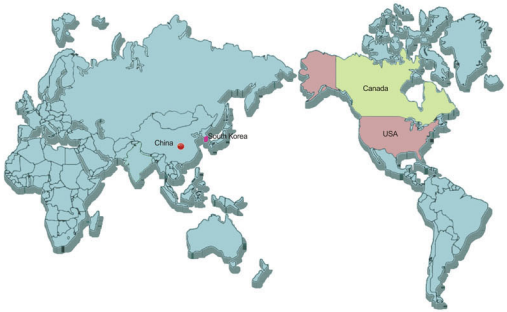
"CMS-20A"/"CMS-30A" Package-set: Stirrer bar included.
Optional Spare Parts: (1)Stand Pole,Stainless Steel,no screw-thread, Φ12. 7×L390mm,for CMS-30A;
(2)Stand Pole,Stainless Steel,1.5p screw-thread, Φ12×L450mm,for CMS-20A;
(3) Holder/Clamp/Clip,for Temperature by sensor.

Technical Specifications

Model		"CMS-20A"	"CMS-30A"
Material	Body	Powder Coated Aluminum	Powder Coated Steel
	Plate	Ceramic Coated Aluminum Plate (Chemical / Acid Resistance, Easy to Clean)	
Stirring Capacity (H20) & Motor Power		Max. 20 Lit., 9/4W	
Speed Range		0~1,500rpm	
Temperature Range		RT~380℃	
Temperature Uniformity		Specially Designed Heating Module: Temperature Difference < 10%	
Heating Power		600W	1.2kW
Controller		Advanced PWM Controller	
Stirrer Bar		3cm bar-included, up to 5cm bar	
Ambient Temperature		RT+5~50℃	
Relative Humidity		85%	
Dimensions & Weight		206 x 307 x h99mm, 2.8kg	286 x 387 x h99mm, 3.3kg
Packing Size & Gross weight		400 x 280 x h200mm, 5kg	430 x 320 x h200mm, 5kg
Power Supply		220-240V~, 50/60Hz	

International Sales Network

Exclusive Agents located in USA, Canada and South Korea.
Our products have exported to Russia, Germany, Italy, France, Spain, Israel, Romania, Australia, Mexico, Peru, Malaysia, Vietnam, Pakistan, Sri Lanka, Saudi Arabia, Egypt and other countries.



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